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**HYDROLOGIC DATA
FOR
EXPERIMENTAL AGRICULTURAL
WATERSHEDS IN THE
UNITED STATES
1962**

Miscellaneous Publication No. 1070

**Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE**

**In Cooperation With
State Agricultural Experiment Stations**

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for
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Compiled by
HAROLD W. HOBBS

Soil and Water Conservation Research Division

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Washington, D.C.

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FOREWORD

This publication presents annual basic data on monthly precipitation and runoff; long-term monthly precipitation means for the locality; annual maximum discharges and volumes of runoff; daily air temperature, precipitation, and discharge (for some areas); and selected runoff events, with associated data on rainfall, land use, and antecedent conditions for agricultural watersheds where research studies were in progress during the calendar year 1962. Its presentation is a continuation of the activity of processing and releasing hydrologic data of general interest gathered cooperatively with other agencies. Throughout the life of the watershed studies the State agricultural experiment stations have collaborated in the selection, planning, and operation of the research studies. In several cases, the U.S. Geological Survey and State and local agencies, such as State water boards and highway departments or local drainage and conservation districts, have assisted in the work. The classification and correlation of soils and evaluation of other watershed characteristics in the descriptions have been based mostly on field surveys of the Soil Conservation Service.

The data included here are primarily in response to a request by the Soil Conservation Service, but the information will also be useful to other governmental agencies, private engineers, and others concerned with the development and conservation of the Nation's water resources.

A handwritten signature in cursive script, reading "Cecil H. Wadleigh". The signature is written in dark ink and is positioned above the printed title.

Director, Soil and Water Conservation
Research Division

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The decimal system of paging is used to index the watershed data. Pages are numbered at the bottom according to location and watershed number, and the data for each watershed are given on one or more pages. For example, page 5.6-2 is location 5 (College Park, Md.), watershed 6 (W-6 at College Park), and page 2 of the data for that watershed.

For convenience in finding items listed in tables 2 and 3 and in the "Contents" above, pages are also numbered consecutively at the top.

In table 1, page 14, discontinued watersheds are listed by State, locality, land resource area, number of units, record period, and location number. Table 2, page 15, shows a list of continuing or new watersheds by State, locality, land resource area, assigned location numbers, watershed units, and number of selected runoff events that are reported for 1962 in this publication. Table 3, pages 16 and 17, lists revisions or additions to watershed descriptions or data. Table 4, pages 440 to 447, indexes the 861 selected runoff events, by location, watershed number, drainage area, and peak rates, that have been published for the currently operating watersheds through 1962.

HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962

This publication presents selected hydrologic data for the calendar year 1962. The data include monthly precipitation and runoff for 164 watersheds, annual maximum discharges and annual maximum volumes of runoff for 155 of the watersheds for time intervals of 1, 2, 6, and 12 hours and for 1, 2, and 8 days, daily precipitation and discharge and/or daily air temperature on 51 watersheds, and detailed information for one or more selected typical storm events for 136 of them. Decimal page numbers for older watersheds at the various locations are the same as those given at bottom of pages in five previous publications (see next section), so that old records and general descriptions can be readily found and consulted. New watersheds—the 13 not included in the previous publications—were generally assigned higher location numbers. Nine experimental watersheds were discontinued.

Information on selected storm events includes (1) tabular data for the 30-day antecedent rainfall and runoff prior to the events, (2) data on rainfall and runoff intensity or rate for the event and on accumulated depths of rainfall and runoff, (3) description of watershed conditions at the time of the selected events, (4) graphs of hydrographs and rainfall histograms, (5) watershed maps, and (6) for some of the larger drainage areas, isohyetal maps of storm rainfall distribution.

For newly established watersheds, descriptions of watershed physical characteristics, instrumentation, graphs, maps, land management, and recommended area of application of the results are also given. On 100 old watersheds, original descriptions of characteristics have been revised or updated.

PUBLICATIONS OF EARLIER DATA

Hydrologic data for past years on many of the currently operating experimental agricultural watersheds have been previously summarized in three looseleaf publications by the Agricultural Research Service of the U.S. Department of Agriculture, Washington, D.C. 20402. These reports are listed and summarized below as references 1, 2, and 3. Beginning with the hydrologic data for 1956–59 calendar years, the types of data previously published separately in these three references

were combined in U.S. Department of Agriculture Miscellaneous Publications Nos. 945 and 994. These are listed below as references 4 and 5. All five publications have been assigned these reference numbers to simplify citations to them in this and future publications:

Reference 1.—MONTHLY PRECIPITATION AND RUNOFF FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Branch, 691 pp. 1957. (Includes physical descriptions and land use of 334 experimental agricultural watersheds at 60 locations in 27 States for the period 1923–57. Many of these watersheds had been discontinued prior to 1955.)

Reference 2.—ANNUAL MAXIMUM FLOWS FROM SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Division, 330 pp. 1958. (Includes records from 322 watersheds at 59 locations in 27 States for the period 1923–57. Many of these watersheds had been discontinued prior to 1957.)

Reference 3.—SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Division, 374 pp. 1960. (Includes a sampling of 1 to 6 typical runoff events from 68 watersheds at 40 locations in 25 States for the period 1933–59. The publication presents maps of each watershed, watershed conditions for each event, including the 30-day antecedent rainfall and runoff, and tabular as well as graphical data on each storm.)

Reference 4.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956–59. Harold W. Hobbs, Soil and Water Conservation Research Division, Agricultural Research Service, USDA Miscellaneous Publication No. 945, 672 pp. 1963. (Includes monthly precipitation and runoff from 157 watersheds, including 45 newly established watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 142 watersheds; and one or more typical selected runoff events for 134 watersheds. The publication presents watershed maps, when new or revised, and graphs of each selected event, together with tabular data. Locations of experimental studies

are shown on U.S. fold-in map of land resource areas in 48 States.)

Reference 5.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960–61. Harold W. Hobbs and Florence B. Crammatte, Soil and Water Conservation Research Division, Agricultural Research Service, Miscellaneous Publication No. 994, 496 pp. 1965. (Contains monthly precipitation and runoff from 160 watersheds, including 24 newly established watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 145 watersheds; and one or more typical selected runoff events for 133 watersheds. The publication presents watershed maps, when new or revised, and graphs of each selected event, together with corresponding tabular data. Table 4 gives a listing of selected runoff events published through 1961, for each watershed.)

The above five publications have been furnished to the Soil Conservation Service and to other governmental agencies—Federal, State, and local. They have also been distributed to State agricultural experiment stations, university libraries and engineering departments, and, when requested, to private engineers and individuals. Distribution has also been made to similar foreign institutions and individuals.

FORM OF DATA PRESENTATION

The data in this volume are presented for each watershed in the following order: (1) watershed description, if not previously published; (2) monthly precipitation and runoff; (3) average monthly precipitation and runoff for period of record; (4) local mean monthly (formerly called normal) precipitation; (5) annual maximum flows; (6) daily temperature extremes, daily precipitation, and discharge for some watersheds; (7) tabulations of data for selected runoff events; (8) graphs of selected runoff events; (9) watershed maps, if not previously published or if revised; and (10) isohyetal maps (in some cases) of storm rainfall distribution for selected runoff events.

Four new two-part continuous tabulator forms for listing data by accounting machines from punch cards are used in this volume for some locations. The forms permit the direct listing of location and watershed titles, calendar years, daily precipitation, discharge, and air temperatures, and antecedent *precipitation* and *runoff*, rainfall intensities, and runoff rates for selected events, including footnotes to tables. The footnotes, of necessity, are listed in capital letters. For the rest of the locations, the old table formats are also used this year for the current 1962 data.

Continuing Watersheds

Since the descriptions of 151 of the current watersheds have been published in *References 1, 4, or 5*, the tabular data presentation for these begins at the top of the first page. Above the border at the center, the numerical page number is given, and the decimal page number is shown at the bottom.

In the space to the right of the first table title MONTHLY PRECIPITATION AND RUNOFF (inches), the location *name*, watershed *number* (or designation), and watershed *size* are given. In the table, for the current *calendar* year, the *precipitation* (P) in inches is listed in the monthly columns, with the yearly total given in the last column headed *annual*. In the line below, the corresponding *runoff* (Q) in inches is similarly listed for each month and the total for the year. Underneath, in two lines, is given the (P) and (Q) station average (STA AV) by months with annual total for the period of record. On the bottom line of the table is given the long-term monthly and annual precipitation means (averages) for the nearest U.S. Weather Bureau Station.

In the second table, entitled ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS, data are also given for the *calendar* year listed in the first column. Under the *maximum discharge* heading, the date column shows the day and month the instantaneous peak rate in inches per hour occurred. In computing the rate, corrections were made for any significant pondage above the runoff measuring device. Under the *maximum volume* heading, the date refers to the day and month on which the interval began; for example, if the interval began on August 30 at 2359, the entry in the date column will be 8–30. The depths for 1 hour to 8 days are the annual maximum values recorded, without regard to even clock hours or days; thus, if the 6-hour interval began at 1332, the interval would end exactly 6 hours later at 1932. The volume given is in inches of average depth over the watershed for each of the seven selected time intervals (1, 2, 6, and 12 hours, and 1, 2, and 8 days). In the last section of the table the maximum discharges and depths for the various time periods are given under MAXIMUMS FOR PERIOD OF RECORD.

Notes and footnotes in explanation of the data given below the first two tables include (1) a statement on the quality of records based on the following criteria: *excellent* indicates in general that the records are probably accurate within 5 percent, *good* within 10 percent, *fair* within 15 percent, and *poor* that the records may be in error by over 15 percent; (2) a general statement as to watershed conditions and

other physical changes for the period covered; (3) corrections or revisions for previously reported data; (4) source of long-term precipitation means or averages and years covered; and (5) other pertinent material or explanations of the hydrologic data in the two tables.

For some watersheds, tables of DAILY AIR TEMPERATURE (maximum and minimum in degrees Fahrenheit), DAILY PRECIPITATION (inches), and DAILY DISCHARGE (c.f.s.) are given next with appropriate footnotes in explanation of the data at the end of each table. The multiplier to convert mean daily discharge in cubic feet per second to inches per day is given as first note to the daily discharge table. The conversion factor for daily inches to acre-feet is sometimes given.

If no daily tables are given, the tabular data for SELECTED RUNOFF EVENTS begin in the remaining space on the first page and then are carried forward on continuation sheets (or pages) until completed. One to four storm runoff events were chosen, from data available, for presentation. In general, the *selected runoff events* were those in which runoff was produced by a relatively uniform rainfall excess of short duration. The information for each event includes tabulation of (1) *antecedent* daily rainfall and runoff for 30 days before the event or reference made to daily tables, if used; (2) rainfall *intensities* and *accumulated amounts* for the event; (3) runoff *rates* and *accumulated amounts* for the event; and (4) specific *watershed conditions* at the time of the event. Simple graphs of the rates of rainfall and runoff are shown for all events on pages following the tabular data.¹ Maps follow the graphs unless previously published in *References* 3, 4, or 5, or if they were shown herein on the map of another watershed. Isohyetal maps, if any, generally follow the regular maps.

In the "Notes" space at the bottom of the first page for runoff events, the multiplier to convert runoff rates in inches per hour to cubic feet per second, or vice versa, is given, followed by references to maps, if required, and explanatory notes or footnotes relating to the tabular data. Below the bottom border and above the first index page number, the cooperating agencies are listed. The notes on continuation pages contain the statement on the multiplier and similar explanations of the data on each page.

New Watersheds

For the 13 watersheds installed in recent years that have not been reported previously, the presentation begins with the watershed de-

scription in the upper part of the first page. The explanations and definitions upon which the description is based are given in the next section.

The first line, centered at the top of the sheet, gives the *project location*, which is the nearest city or town, and the *number or name* of the watershed as used locally. The descriptive material is then given under the 12 major topics listed generally down the left side of the sheet: *Location, Area, Slopes, Soils, Erosion, Land Capability, Geology, Surface Drainage, Character of Flow, Instrumentation, Watershed Conditions, and Generally Represents.*

After this description, the tabular data are then summarized in the first two tables and notes as previously described for "Continuing Watersheds." The tabular data for daily air temperatures, precipitation, and discharge, if presented, precede the tabular data for SELECTED RUNOFF EVENTS. The rest of the material of the series for the particular watershed follows in the same order as previously indicated.

WATERSHED DESCRIPTIONS

The following definitions and explanations were used in describing watershed location, watershed characteristics, instrumentation, land management, and recommended area of application of the hydrologic data.

LOCATION gives county and State, distance and direction of the runoff gaging station from the nearest city or town, and the major river basin in which it lies. When two or more basins are involved, the tributary or subbasin is given first, followed by the major basin.

AREA of watershed is given in acres if under 640 acres, in both acres and square miles (in parentheses) if over 1 square mile. If areas are revised, additional values are given with notes on date of change.

SLOPES are given in terms of the ranges commonly used in soil survey work in the locality. The percentages of the watershed lying in each slope class are listed. As an example, "8% is in 0-2% class" means that 8 percent of the watershed area has slopes ranging from 0 to 2 percent.

SOILS are described briefly, according to definitions from the U.S. Department of Agriculture SOIL SURVEY MANUAL, Agriculture Handbook 18, published in 1951. Soil descriptions were revised on 40 of the continuing watersheds and descriptions given for 12 new watersheds.

Soil texture refers to the relative proportions of the various size groups (or separates) of individual soil grains in a mass of soil. Specifically, it refers to the proportions of clay, silt,

¹In some cases, noncritical points were eliminated from original tabulations to reduce the number of lines required in the tables for times, rates, and accumulations.

and sand below 2 millimeters in diameter. The various classes of texture in order of increasing percentages of the smaller size groups and decreasing percentages of the larger size groups are (1) sands, (2) loamy sands, (3) sandy loams, (4) loam, (5) silt loam, (6) silt, (7) sandy clay loam, (8) clay loam, (9) silty clay loam, (10) sandy clay, (11) silty clay, and (12) clay. In some of the descriptions, the broader classification of coarse, moderately coarse, medium, moderately fine, and fine has been used—the coarse soils are the sands and the fine soils the clays.

Soil structure refers to the aggregation of primary soil particles into compound particles, or clusters of primary particles, that are separated from adjoining aggregates by surfaces of weakness. Structure *grade*, or the durability of the aggregates when subjected to disturbance, is described as *structureless*, *weak*, *moderate*, or *strong*. In some cases, the structureless grade is described as *massive*, if coherent, or *single grain*, if non-coherent. The *size* of the aggregates is described as *very fine*, *fine*, *medium*, *coarse*, or *very coarse*. Structure *shape* is described as being *platy*, *prismatic*, *columnar*, *angular blocky*, *subangular blocky*, *granular*, or *crumb*.

Permeability is the quality of a soil that enables it to transmit water or air. This quality is described by the terms *very slow*, *slow*, *moderately slow*, *moderate*, *moderately rapid*, *rapid*, or *very rapid*.

Internal soil drainage is the quality of a soil that permits the downward flow of excess water through it. Internal drainage is reflected in the frequency and duration of periods of saturation with water. It is determined by the texture, structure, and other characteristics of the soil profile and of underlying layers and by the height of the water table, either permanent or perched, in relation to the water added to the soil. *Internal drainage* is described as *none*, *very slow*, *slow*, *medium*, *rapid*, or *very rapid*.

EROSION conditions on the watershed are described in accordance with the following classification for water and wind erosion, also briefed from Agriculture Handbook 18. The percentage of the watershed in the following erosion classes is given.

Class 1.—The soil has a few rills or places with thin A horizons that give evidence of accelerated erosion, but not to an extent to alter greatly the thickness and character of the A horizon. Except for soils having very thin A horizons (less than 8 inches), the surface soil consists entirely of A horizon throughout nearly all of the delineated areas. Up to about 25 percent of the original A horizon, or original plowed layer in soils with thin A horizons, has

been removed from most of the area. This class also includes the areas of no erosion.

Class 2.—The soil has been eroded to the extent that ordinary tillage implements reach through the remaining A horizon or well below the depth of the original plowed layer in soils with thin A horizons. Generally, the plow layer consists of a mixture of the original A horizon and the underlying horizons. Mapped areas of eroded soil usually have patches in which the plow layer consists wholly of the original A horizon and others in which it consists wholly of underlying horizons. Shallow gullies may be present. Approximately 25 to 75 percent of the original A horizon or surface soil may have been lost from most of the area.

Class 3.—The soil has been eroded to the extent that all or practically all of the original surface soil, or A horizon, has been removed. The plow layer consists essentially of materials from the B or other underlying horizons. Patches in which the plow layer is a mixture of the original A horizon and the B horizon or other underlying horizons may be included within mapped areas. Shallow gullies, or a few deep ones, are common in some soil types. More than about 75 percent of the original surface soil, or A horizon, and commonly part or all of the B horizon or other underlying horizons has been lost from most of the area.

Class 4.—The land has been eroded until it has an intricate pattern of moderately deep or deep gullies. Soil profiles have been destroyed except in small areas between the gullies. Such land is not useful for crops in its present condition. Reclamation for crop production or for improved pasture is difficult, but may be practicable if other characteristics of the soil are favorable and erosion can be controlled.

Class +.—Recent alluvial and colluvial deposition.

LAND CAPABILITY is given as classified by Klingebiel and Montgomery in U.S. Department of Agriculture LAND-CAPABILITY CLASSIFICATION, Agriculture Handbook 210, published in 1961. The classification expresses the suitability of land for use without deterioration. The eight land-capability classes are distinguished according to the risk of land damage or difficulty of land use. The following classes I to IV are suitable for cultivation and other uses, whereas classes V to VIII are not suitable for cultivation.

Class I.—Very good land for cultivation; nearly level and productive; not subject to erosion; needs only ordinary good farming methods.

Class II.—Good land for cultivation; mostly gently sloping; not more than moderately subject to erosion; some land may be rather wet;

can be farmed safely with easily applied practices.

Class III.—Moderately good land for cultivation; mostly moderately sloping; some areas too wet or too dry; can be farmed safely with practical conservation measures, carefully applied; usually a combination of two or more measures is needed.

Class IV.—Fairly good land, suitable for occasional cultivation; generally strongly sloping; often shallow or very sandy; often found in dry climate.

Class V.—Land very well suited for grazing or forestry; requires good range or woodland management.

Class VI.—Land well suited for grazing or forestry; steeply sloping land, stony or shallow soil, eroded land, droughty land, or wet land; requires careful management.

Class VII.—Land fairly well suited for grazing or forestry; severely limited in use by such factors as very steep slope, shallow or droughty soil, wetness, severe erosion, or excessive salinity; requires very careful management.

Class VIII.—Land not suitable for cultivation, grazing, or forestry; may be useful for wildlife, recreation, or protection of water supplies.

GEOLOGY of 12 of the new watersheds is described herein, together with that of 71 of the old "Continuing Watersheds." A brief description of the portion of the watershed occupied by various geological formations or series is given, together with strike and dip of the strata, thickness, and relative position, when known. Faults, perched water tables, outcrops, if present, and other details that relate to the movement of water within the drainage area or that affect the hydrology of the watershed are described. Four geologic maps are presented to aid in the understanding of the formations on four major watersheds that contain 59 sub-watersheds.

SURFACE DRAINAGE refers to the ease with which excess water flows from the watershed area. The length of principal waterway is the distance from the gaging station to the most remote point on the watershed boundary, measured along the flood plain of the watercourse.

CHARACTER OF FLOW describes the flow of the principal watercourse with respect to permanence and space. The following definitions are from Meinzer's OUTLINE OF GROUND-WATER HYDROLOGY, U.S. Geological Survey Water-Supply Paper 494, published in 1923.

With respect to permanence, streams may be divided into perennial streams, intermittent streams, and ephemeral streams.

A *perennial stream*, or stretch of a stream, is one that flows continuously. Perennial streams

are generally fed in part by springs, and their upper surfaces generally stand lower than the water table in the localities through which they flow.

Intermittent streams may be divided, with respect to the source of their water, into spring-fed intermittent streams and surface-fed intermittent streams. They also flow in direct response to precipitation.

A *spring-fed intermittent stream*, or stretch of a stream, is one that flows only at certain times when it receives water from springs. The intermittent character of streams of this type is generally caused by fluctuations of the water table whereby the stream channels stand a part of the time below and part of the time above the water table. This is the ordinary type of intermittent stream.

A *surface-fed intermittent stream*, or stretch of a stream, is one that flows during protracted periods when it receives water from some surface source, generally the gradual and long-continued melting of snow in a mountainous or other cold tributary area. The term may be arbitrarily restricted to streams or stretches of streams that flow continuously during periods of at least 1 month.

An *ephemeral stream*, or stretch of a stream, is one that flows only in direct response to precipitation. It receives no water from springs and no long-continued supply from melting snow or other surface source. Its stream channel is at all times above the water table. The term may be arbitrarily restricted to streams or stretches of streams that do not flow continuously during periods of as much as 1 month.

With respect to continuity in space, streams may be divided into continuous streams and interrupted streams. An *interrupted stream* is one that contains (1) perennial stretches with intervening intermittent or ephemeral stretches or (2) intermittent stretches with intervening ephemeral stretches. These two classes of interrupted streams are designated, respectively, *perennial interrupted streams* and *intermittent interrupted streams*. A *continuous stream* is one that does not have interruptions in space. It may be perennial, intermittent, or ephemeral, but it does not habitually have wet and dry stretches.

INSTRUMENTATION describes type of runoff control or measuring device, number and type of precipitation gages, type of charts used, and snow courses, if employed.

WATERSHED CONDITIONS describes the general use and farm, forest, or range practices prior to the period of record and the conservation measures, crops, yields, and general cultural operations and practices during the period of record. Rotation crops are listed in the order

that they were grown. Operations are described with commonly used agricultural terms, and only those that appear to have a significant relationship to the hydrology of the watershed are mentioned.

GENERALLY REPRESENTS gives the broad area application for which the data of the specific watershed are recommended. The areas named are those delineated on the map "Location of Experimental Agricultural Watersheds of the Agricultural Research Service," previously published as cover page 3 of *Reference 4* for 1956-59. The location of each project is shown by number on this Soil Conservation Service base map of numbered land resource areas in the United States prepared in January 1963. Solid red circles show the location of "continuing" or "new" watersheds, and open red circles show areas where experimental studies have been discontinued, but for which records have been previously published in *References 1, 2, 3, 4, or 5*. A smaller index map, showing less detail, can be found on pages 12 and 13 of this volume, together with a legend for the land resource areas and major land resource regions.

In some cases there is an apparent contradiction between the watershed location on the maps and the descriptive information given under "Generally Represents." This is due to the small scale of the maps; it is difficult to show many small local variations in boundaries of the land resource areas. The descriptive statements, rather than the map location, should be the guide to the application of the data.

STANDARD SYMBOLS FOR TABULAR DATA

The following capital letters have been used as standard symbols throughout this volume to designate specific items or meanings:

- A—precipitation of unknown time of occurrence, amount generally carried forward.
- E—shows that a figure is estimated or partially estimated.
- H—precipitation in the form of hail.
- L—precipitation which is sleet or freezing rain.
- M—mixed precipitation of rain, snow, and sleet.
- N—precipitation in form of rain and snow.
- NR—used in place of a figure to indicate "no record."
- P—designates monthly or annual precipitation in inches.
- Q—designates monthly or annual runoff in inches.
- RG—designates rain gage, generally followed by gage number.

R—followed by hyphen and a number is recording rain gage.

S—followed by hyphen and a number is standard rain gage.

S—precipitation in form of snow.

STA AV (or AVG)—designates station average for period of record.

T—denotes a trace, generally less than 0.005 inch of precipitation and 0.01 inch of runoff (or 0.0001 inch of runoff, if 4 decimal places are used).

Time of day symbols or designations *a, p, m,* and *n* used in previous publications through 1961 have been dropped and Military Time (0001 to 2400) substituted for 1962 forward. Unless stated otherwise, time used in tables is Eastern, Central, Mountain, or Pacific Standard Time, whichever applies to the given location.

REVISIONS OF PREVIOUSLY PUBLISHED DATA

In some instances, it has been necessary to revise previously published data on specific watersheds. If the corrections involve changed values of monthly precipitation or runoff or annual maximum discharges or maximum volumes for various durations, whole lines for the year are republished with the changed items underlined. These revisions are explained in footnotes following the tables in which they appear.

If additions or revisions are made to watershed descriptions, they are placed following the above-mentioned tables. In 71 cases, a statement on geology has been added to the original descriptions. The geology of 12 of the 13 new watersheds is described. In several cases, revised map pages have been inserted and labeled, for example: "(1956-59 Map) 26. 32-5 (Revision)" and are placed immediately preceding the current 1962 sheets for the particular watershed. All of the above changes are listed by States in table 3, page 16.

PERSONNEL RESPONSIBLE FOR COMPILATIONS

At each research location, many individuals have contributed to the planning and establishment of the watersheds and the collection, compilation, and analysis of the data. Some of those who made substantial contributions to the success of the research work behind this report are as follows:

<i>Location</i>	<i>Name or names</i>
5	Harold W. Hobbs
8	William H. Speir John C. Stephens
10	Aurelius P. Barnett
13, 66	James B. Burford, Vernon O. Shanholtz
21, 25, 61	Keith E. Saxton
26	Lloyd L. Harrold
29, 31, 32	Neal E. Minshall
42	Walter G. Knisel Ralph W. Baird
34, 37	Wendell R. Gwinn William O. Ree
44	John A. Allis Frank J. Dragoun
45, 47, 63, 64	Herbert B. Osborn Robert V. Keppel Don L. Chery
62	W. Russell Hamon Farris E. Dendy
65	John W. Neuberger
67	George H. Comer Martin L. Johnson
69	Monroe A. Hartman Donn G. DeCoursey

ADDITIONAL PUBLICATIONS BY LOCATION

In References 1, 4, and 5 (see pp. 1 and 2), references to other publications that presented watershed data and interpretations of results in various journals, bulletins, and periodicals were given at the end of the introductions for many of the locations. Below is a listing, by location number, of additional references to results that have been reported through 1962. Included are citations to the county or regional soil surveys for all locations not covered in the 1960-61 volume. At the end, a number of items that could not be readily tied to a specific location are listed in a general group.

6. Hagerstown, Md.

MATTHEWS, E. D., and others.

1962. SOIL SURVEY OF WASHINGTON COUNTY, MARYLAND. U.S. Dept. Agr. SCS 1959 (17), 136 pp., maps.

8. Vero Beach, Fla.

SPEIR, W. H.

1962. INSTALLATION AND OPERATION OF NON-WEIGHING LYSIMETERS. Soil and Crop Sci. Soc. Fla. Proc. 22: 167-176, illus.

11. High Point, N.C.

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1923. SOIL SURVEY OF GUILFORD COUNTY, NORTH CAROLINA. U.S. Dept. Agr. BS 1920: 167-199, illus., map.

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UNITED STATES INDEX MAP AND RELATED DATA

[Pages 12 through 17]

**LOCATION OF EXPERIMENTAL AGRICULTURAL WATERSHEDS OF THE AGRICULTURAL RESEARCH SERVICE BY
LAND RESOURCE REGIONS AND
MAJOR LAND RESOURCE AREAS
OF THE UNITED STATES**
(48 conterminous states)

- KEY TO RESEARCH LOCATIONS**
- 37 Current (continuing) studies
 - 43 Discontinued locations
- NOTE:** Location 16 was not used



LEGEND
Land Resource Region

59 Major Land Resource Area

Mountains

Wet Land

SCALE IN MILES

LEGEND FOR LAND RESOURCE REGIONS AND MAJOR LAND RESOURCE AREAS (of the 48 states)

A NORTHWESTERN FOREST, FORAGE, AND SPECIALTY CROP REGION

- 1 Northern Pacific Coast Range and Valleys
- 2 Willamette and Puget Sound Valleys
- 3 Olympic and Western Slope Cascade Mountains
- 4 California Coastal Redwood Belt
- 5 Siskiyou-Trinity Area

B NORTHWESTERN WHEAT AND RANGE REGION

- 6 Eastern Slope Cascade Mountains
- 7 Columbia Basin
- 8 Columbia Plateau
- 9 Palouse and Nez-Perce Prairies
- 10 Upper Snake River Lava Plains and Hills
- 11 Snake River Plains
- 12 Lost River Valley and Mountains
- 13 Eastern Idaho Plateaus

C CALIFORNIA SUBTROPICAL FRUIT, TRUCK AND SPECIALTY CROP REGION

- 14 Central California Valleys
- 15 Central California Coast Range
- 16 Central Valley Delta
- 17 Sacramento and San Joaquin Valleys
- 18 Sierra Nevada Foothills
- 19 Southern California Coastal Plain
- 20 Southern California Mountains

D WESTERN RANGE AND IRRIGATED REGION

- 21 Klamath and Shasta Valleys and Basins
- 22 Sierra Nevada Range
- 23 Malheur High Plateau
- 24 Humboldt Area
- 25 Owyhee High Plateau
- 26 Carson Basin and Mountains
- 27 Fallon-Lovelock Area
- 28 Great Salt Lake Area
- 29 Southern Nevada Basin and Range
- 30 Sonoran Basin and Range
- 31 Imperial Valley
- 32 Colorado Plateau Desertic Basins
- 33 Sonoran Rocky Mountains
- 34 Central Desertic Basins, Mountains and Plateaus
- 35 Colorado and Green Rivers Plateaus
- 36 New Mexico and Arizona Plateaus and Mesas
- 37 San Juan River Valley Mesas and Plateaus
- 38 Black, Hualapai, and Cerbat Mountains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

E ROCKY MOUNTAIN RANGE AND FOREST REGION

- 43 Northern Rocky Mountains
- 44 Northern Rocky Mountain Valleys
- 45 Alpine Meadows and Rockland
- 46 Northern Rocky Mountain Foothills
- 47 Waatch and Uinta Mountains
- 48 Southern Rocky Mountains
- 49 Southern Rocky Mountain Foothills
- 50 San Luis Valley
- 51 High Intermountain Valleys

Compiled by Morris E. Austin
Information from SCS, State, and other Offices

F NORTHERN GREAT PLAINS SPRING WHEAT REGION

- 52 Brown Glaciated Plain
- 53 Dark Brown Glaciated Plain
- 54 Rolling Soft Shale Plain
- 55 Red River Valley of the North
- 56 Red River Valley of the North
- 57 Western Minnesota Forest-Prairie Transition

G WESTERN GREAT PLAINS RANGE AND IRRIGATED REGION

- 58 Northern Rolling High Plains
- 59 Northern Smooth High Plains
- 60 Pierre Shale Plains and Badlands
- 61 Black Hills Plateaus
- 62 Black Hills
- 63 Rolling Pierre Shale Plains
- 64 Mixed Sandy and Silty Tableland
- 65 Nebraska Sand Hills
- 66 Dakota Sand Hills
- 67 Central High Plains Flooded Tableland
- 68 Irrigated Upper Plateau River Valley
- 69 Upper Arkansas Valley Rolling Plains
- 70 Pecon-Canadian Plains and Valleys

H CENTRAL GREAT PLAINS WINTER WHEAT AND RANGE REGION

- 71 Central Nebraska Loess Hills
- 72 Central High Tableland
- 73 Rolling Plains and Breaks
- 74 Central Kansas Sandstone Hills
- 75 Central Loess Plains
- 76 Bluestem Hills
- 77 Southern High Plains
- 78 Central Rolling Red Plains
- 79 Great Bend Sand Plains
- 80 Central Rolling Red Prairies

I SOUTHWESTERN PLATEAUS AND PLAINS, RANGE AND COTTON REGION

- 81 Edwards Plateau
- 82 Texas Central Basin
- 83 Rio Grande Plain

J SOUTHWESTERN PRAIRIES, COTTON AND FORAGE REGION

- 84 Cross Timbers
- 85 Grand Prairie
- 86 Texas Blackland Prairie
- 87 Texas Claypan Area

K NORTHERN LAKE STATES FOREST AND FORAGE REGION

- 88 Northern Minnesota Swamps and Lakes
- 89 Minnesota Rockland
- 90 Wisconsin Rockland
- 91 Wisconsin and Minnesota Sandy Outwash
- 92 Superior Lake Plain
- 93 Northern Michigan and Wisconsin Stony, Sandy and Rocky Plains and Hills
- 94 Northern Michigan Sandy Drift

L LAKE STATES FRUIT, TRUCK, AND DAIRY REGION

- 95 Southeastern Wisconsin Drift Plain
- 96 Western Michigan Fruit Belt
- 97 Southwestern Michigan Fruit and Truck Belt
- 98 Southern Michigan Drift Plain
- 99 Erie-Huron Lake Plain
- 100 Erie Fruit and Truck Area
- 101 Ontario-Molokw Plain

M CENTRAL FEED GRAINS AND LIVESTOCK REGION

- 102 Loess, Till, and Sandy Prairies
- 103 Central Iowa and Minnesota Till Prairies
- 104 Eastern Iowa and Minnesota Till Prairies

(continued)

- 105 Northern Mississippi Valley Loess Hills
- 106 Nebraska and Kansas Loess Hills
- 107 Missouri Deep Loess Hills
- 108 Illinois and Iowa Deep Loess and Drift
- 109 Iowa and Missouri Heavy Till Plain
- 110 Northern Illinois and Indiana Heavy Till Plain
- 111 Indiana and Ohio Till Plain
- 112 Cherokee Prairies
- 113 Central Claypan Areas
- 114 Southern Illinois and Indiana Thin Loess and Till Plain
- 115 Central Mississippi Valley Wooded Slopes

N EAST AND CENTRAL GENERAL FARMING AND FOREST REGION

- 116 (See M Above)
- 117 Ozark Highlands
- 118 Ozark Highlands
- 119 Arkansas Valley and Ridges
- 120 Ouachita Mountains
- 121 Kentucky and Indiana Sandstone and Shale Hills and Valleys
- 122 Kentucky Bluegrass
- 123 Highland Rim and Pennyroyal
- 124 Nashville Basin
- 125 Western Allegheny Plateau
- 126 Cumberland Plateau and Mountains
- 127 Central Allegheny Plateau and Mountains
- 128 Southern Appalachian Ridges and Valleys
- 129 Appalachian Mountains
- 130 Blue Ridge

O MISSISSIPPI DELTA COTTON AND FEED GRAINS REGION

- 131 Southern Mississippi Valley Alluvium
- 132 Eastern Arkansas Prairies
- 133 (See P below)

P SOUTH ATLANTIC AND GULF SLOPE CASH CROP, FOREST, AND LIVESTOCK REGION

(See J Above)

- 133 Southern Coastal Plain
- 134 Southern Mississippi Valley Silty Uplands
- 135 Alabama and Mississippi Blackland Prairies
- 136 Southern Piedmont
- 137 Carolina and Georgia Sandhills
- 138 North Central Florida Ridge

R NORTHEASTERN FORAGE AND FOREST REGION

- 139 Eastern Ohio Till Plain
- 140 Glaciated Allegheny Plateau and Catskill Mountains
- 141 Tughill Plateau
- 142 St. Lawrence-Champlain Plain
- 143 Northeastern Mountains
- 144 New England and Eastern New York Upland
- 145 Connecticut Valley
- 146 Aroostook Area

S NORTHERN ATLANTIC SLOPE TRUCK, FRUIT, AND POULTRY REGION

- 147 Northern Appalachian Ridges and Valleys
- 148 Northern Piedmont
- 149 Northern Coastal Plain

T ATLANTIC AND GULF COAST LOWLANDS, FOREST AND TRUCK CROP REGION

- 150 Gulf Coast Prairies
- 151 Gulf Coast Marsh
- 152 Gulf Coast Flatwoods
- 153 Atlantic Coast Flatwoods

U FLORIDA SUBTROPICAL FRUIT, TRUCK CROP AND RANGE REGION

- 154 South Central Florida Ridge
- 155 Southern Florida Flatwoods
- 156 Florida Everglades and Associated Areas

TABLE 1.—Watersheds, listed by State, where observations were discontinued before January 1, 1962

[Hydrologic data were published in References 1 to 5, given on pages 1 and 2]

State	Locality	Major land resource area <u>1/</u>	Discontinued watershed units		
			Number	Record period <u>2/</u>	Location No.
Alabama.....	Auburn.....	P-133.....	1	1945-47.....	7
Arkansas.....	Bentonville.....	N-116.....	6	1933-47 (SE).....	33
California.....	Placerville.....	C-18.....	1	1936-44 (SE).....	50
	Santa Paula.....	C-19.....	9	1934-43.....	51
	Sebastopol.....	C-14.....	2	1936-43 (SE).....	52
	Vacaville.....	C-16.....	1	1936-42.....	53
	Watsonville.....	C-14.....	4	1938-42 (SE).....	54
Colorado.....	Colorado Springs.....	G-67.....	4	1938-46 (SE).....	46
Georgia.....	Americus.....	P-133.....	4	1938-43 (SE).....	9
Idaho.....	Emmett.....	B-10, B-11.....	2	1938-41 (SE).....	55
	Moscow.....	B-9.....	2	1937-42 (SE).....	56
Illinois.....	Edwardsville.....	M-113.....	4	1938-55 (SE).....	17
	Elmwood.....	M-108.....	12	1945-46.....	18
Indiana.....	Lafayette.....	M-110.....	20	1940-53 (SE).....	19
Iowa.....	Clarinda.....	M-107.....	5	1932-42.....	20
	Shenandoah.....	M-107.....	2	1934-40.....	22
Kansas.....	Hays.....	H-73.....	2	1932-47.....	43
Maryland.....	College Park.....	S-149.....	8	1939-54 (SE).....	5
	Hagerstown.....	S-147.....	2	1938-47 (SE).....	6
Michigan.....	East Lansing.....	L-98.....	3	1941-59 (SE).....	23
Missouri.....	Bethany.....	M-109.....	8	1932-42 (SE).....	24
Mississippi.....	Oxford.....	P-133, P-134....	1	1957-59 (SE).....	62
Nebraska.....	Hastings.....	H-71, H-73, H-75	15	1939-54 (SE).....	44
			1	1939-61 (SE).....	44
New Jersey.....	Freehold.....	S-149.....	3	1938-43 (SE) <u>3/</u> ..	4
New Mexico.....	Mexican Springs.....	D-39.....	12	1937-42 (SE).....	48
	Santa Fe.....	G-70, E-48.....	3	1939-48 (SE).....	49
New York.....	Arnot Forest.....	R-140.....	2	1941-47.....	1
	Cohocton.....	R-140.....	2	1938-45 (SE).....	2
North Carolina.....	High Point.....	P-136.....	3	1934-58 (SE).....	11
	Statesville.....	P-136.....	2	1933-38.....	12
Ohio.....	Coshocton.....	N-124.....	4	1937-47 (SE).....	26
	Hamilton.....	M-111.....	4	1938-44 (SE).....	27
	Zanesville.....	N-124.....	3	1934-45.....	28
Oklahoma.....	Cherokee.....	H-80.....	9	1942-60 (SE).....	34
	Guthrie.....	J-84.....	11	1930-55 (SE) <u>4/</u> ..	35
	Muskogee.....	M-112.....	3	1938-47.....	36
Oregon.....	Newberg.....	A-2.....	4	1938-42 (SE).....	57
South Dakota.....	Newell.....	G-60.....	8	1958-61.....	65
Texas.....	Garland.....	J-86.....	3	1938-47.....	38
	Riesel (Waco).....	J-86.....	14	1937-43 (SE).....	42
	Spur.....	J-78.....	9	1927-45.....	39
	Tyler.....	P-133.....	4	1931-44 (SE).....	40
	Vega.....	H-77.....	2	1938-43 (SE).....	41
Virginia.....	Chatham (Danville).....	P-136.....	3	1938-48 (SE).....	14
	Staunton.....	N-128.....	3	1948-56 (SE).....	15
Washington.....	Dayton.....	B-9.....	1	1939-42.....	58
	Pullman <u>5/</u>	B-9.....	3	1934-40.....	59
	Pullman <u>6/</u>	B-9.....	8	1931-47 (SE).....	60
Wisconsin.....	Coon Valley.....	M-105.....	2	1934-40.....	30
	La Crosse.....	M-105.....	4	1933-54 <u>1/</u>	32

1/ See location map and legend, pages 12 and 13.2/ (SE) indicates locations where selected runoff events were published in References 3, 4, and/or 5.3/ 1 watershed also operated during 1950-55.4/ Watersheds operated for varying periods of 12 to 23 yr.5/ SCS Demonstration Project.6/ Soil and Water Conservation Experiment Station.7/ 1 watershed discontinued in 1942, 2 in 1947.

TABLE 2.--Experimental agricultural watershed research locations under study for 1962 hydrologic data, by States ^{1/}

State	Locality	Major land resource area ^{2/}	Assigned location No.	Watershed units (number)	Events reported (number)	Pages (inclusive)
Arizona.....	Safford.....	D-41, D-42.....	45	4	1	279-284
	Tombstone.....	D-41.....	63	5	3	341-353
Florida.....	Vero Beach.....	U-155.....	8	<u>4/</u> 4	7	25-48
Georgia.....	Watkinsville....	P-136.....	10	1	1	49-51
Illinois.....	Monticello ^{3/} ...	M-108.....	61	---	---	---
Iowa.....	Iowa City.....	M-108.....	21	1	1	90,91
Maryland.....	College Park....	S-149.....	5	2	2	20-24
Mississippi.....	Oxford.....	P-133, P-134.....	62	17	20	287-340
Missouri.....	McCredie.....	M-113.....	25	2	2	92-95
Nebraska.....	Hastings.....	H-71, H-73, H-75...	44	<u>1/5/</u> 14	14	245-278
New Mexico.....	Albuquerque.....	D-42.....	47	3	0	285,286
	Santa Rosa.....	G-70.....	64	1	1	354-358
Ohio.....	Coshocton.....	N-124.....	26	35	34	96-168
Oklahoma.....	Cherokee.....	H-80.....	34	6	12	178-195
	Chickasha.....	H-78, H-80, J-84...	69	<u>6/</u> 10	0	396-439
	Stillwater.....	H-80.....	37	3	3	196-201
South Dakota.....	Newell.....	G-60.....	65	<u>1/</u> 7	0	359-372
Texas.....	Riesel (Waco)...	J-86.....	42	20	20	202-244
Vermont.....	North Danville..	R-144.....	67	4	4	383-395
Virginia.....	Blacksburg.....	N-128, S-147, N-130, P-136, S-148	13	14	14	52-89
West Virginia....	Moorefield.....	N-128, S-147.....	66	4	4	373-382
Wisconsin.....	Colby.....	K-90.....	29	1	2	169,170
	Fennimore.....	M-105.....	31	4	4	171-176
	La Crosse.....	M-105.....	32	2	0	177

^{1/} W-5 watershed at Hastings, Nebr. (44), and 8 of 15 at Newell, S. Dak. (65), have been discontinued.

^{2/} See location map and legend, pages 12 and 13.

^{3/} Report deferred on the 2 watersheds.

^{4/} Includes data on 1 new watershed, W-4.

^{5/} Includes data on 2 old watersheds reinstated, 22-H and 23-H.

^{6/} Includes data on 10 new watersheds.

TABLE 3.—List, by States, of additions or revisions made herein to old data published prior to 1962

State	Locality	Location page No.	Page No. <u>1/</u>	Nature of addition or revision <u>2/</u>
Arizona	Safford	45.1-1 to 4-1	<u>279-284</u>	GENERALLY REPRESENTS <u>revised</u> for the 4 watersheds.
		45.2-1,2	281,282	Tubular data and hydrograph for W-II for 8-22-61 selected runoff event published in Ref. 5 <u>revised</u> .
		45.2-1	281	Aug. 1961 Q and maximum volumes published in Ref. 5 <u>revised</u> .
	Tombstone	63.2 to 4-1,2	342,343 247,350	Tabular data, hydrographs, and isohyets for W-2, 3, and 4 for 8-17,18-61 selected event, published in Ref. 5, <u>revised</u> .
Florida	Vero Beach	8.1 to 3-1	25,29,34	SLOPES, EROSION, and LAND CAPABILITY for W-1, 2, and 3 <u>revised</u> and GEOLOGY descriptions <u>added</u> .
		8.4-1 to 11	38-48	Data <u>added</u> for new W-4 watershed, beginning in 1959.
Georgia	Watkinsville	10-1-1	49	Maximum discharge for 4-25-45 and volumes, dates for 1, 2, 8 days published in Ref. 2, <u>revised</u> . GENERALLY REPRESENTS <u>revised</u> .
Maryland	College Park	5.6-1	20	Monthly P and Q for 1945, 1946, and 1951-55 <u>revised</u> for W-6. Annual maximum discharge and volumes of runoff for selected time intervals <u>revised</u> for 1951-55.
		5.6-1,5.7-1	20,22	SOILS and GENERALLY REPRESENTS <u>revised</u> and GEOLOGY <u>added</u> .
		5.7-1	22,23	Monthly P for 1945, 1946, and 1953 <u>revised</u> for W-7. Daily air temperatures for 1962 and average monthly air temperatures for 1940-62 <u>added</u> .
Mississippi	Oxtord	62.1-1	287	Revisions: Lower graph should be labeled "Rain gages 7, 8, and 18 Thiessen weighted" not "Rain gage 7" as shown in Ref. 4, p. 62.1-3. On topographic map for W-4 gaging station, stream bed elev. should read 454 ft. above MSL instead of 397 ft. as shown on map in Ref. 4, p. 62.1-4.
		62.3-1	294	Revision; on topographic map for W-10 gaging station, stream bed elev. should read 397 ft. above MSL instead of 454 ft. as shown on map in Ref. 4, p. 62.3-3.
		62.7-1	308	AREA <u>changed</u> from 511 to 512 acres after 12-31-61 for W-24.
		62.1-1 to 16-1	<u>287-332</u>	SOILS descriptions in Ref. 4 <u>revised</u> and GEOLOGY descriptions <u>added</u> , except for W-30 discontinued 12-31-59, p. 62.9-1.
		62.17-1,18-1	334,338	SOILS descriptions in Ref. 5 <u>revised</u> .
Missouri	McCredie	25.1-1	92	AREA <u>revised</u> from 153 to 154 acres for W-1, on more precise measurements. Previous date <u>revised</u> from 4-4 to 5-5 for 6 hr. volume for 1961. Maximum discharge and columns for 2 hr. to 2 days <u>revised</u> for 1941. Location <u>revised</u> for S-6.
		25.2-1	94	Location of terrace, omitted from map in Ref. 4, is <u>described</u> in NOTES, together with omitted extension of 4 terraces.
Nebraska	Hastings	44.1-1 44.3-1 to 12-1 44.22-1	245 <u>249-269</u> 271	SLOPES, SOILS, EROSION, LAND CAPABILITY, and GENERALLY REPRESENTS <u>revised</u> for W-3, 8, 11, 1-H, 2-H, 3-H, 4-H, 5-H, 6-H, 7-H, 8-H, and 18-H. GEOLOGY descriptions <u>added</u> .
		44.26-1,27-1	<u>273-278</u>	Watersheds 22-H and 23-H reactivated and descriptions <u>updated</u> .
New Mexico	Santa Rosa	64.1-3,64.1-6	354	Tabular data and hydrograph for W-1 for 8-16,17-57 selected runoff event in Ref. 4 <u>revised</u> .
Ohio	Coshocton	26.1,10,11,12, 13,15,16,17,18, 20,29,30-1	96,109- <u>115,119-</u> <u>125,129</u> <u>145-147</u>	LOCATION (drainage basin, Tuscarawas River) and GENERALLY REPRESENTS <u>revised</u> for watersheds 102, 123, 115, 127, 109, 110, 113, 118, 111, 106, 183, and 196. GEOLOGY descriptions <u>added</u> .
		26.3,4,5,7,8 14,19,21,23, 26,27,28,31, 32,33,34,35, 36,37-1	98-107 117,127 131,133 <u>139-143</u> <u>150-163</u>	GENERALLY REPRESENTS <u>revised</u> for watersheds 129, 135, 130, 131, 132, 103, 121, 188, 185, 172, 169, 177, 10, 5, 92, 94, 95, 97, and 994. GEOLOGY descriptions <u>added</u> .
		26.8-2	106	Shape and contour elevations of topographic map for Watershed 132 published in Ref. 4 was incorrect, map page <u>revised</u> .

1/ Underlined page series (example 279-284) include some pages which do not have additions or revisions.

2/ References 1, 2, and 3 generally cover years 1924-55; Ref. 4, 1956-59; and Ref. 5, 1960-61.

TABLE 3.—List, by States, of additions or revisions made herein to old data published prior to 1962—Continued

State	Locality	Location page No.	Page No.	Nature of addition or revision ^{1/}
Ohio	Coshocton Continued....	26.24-1,26.25-1	135,137	LOCATION (drainage basin, Tuscarawas River) and GENERALLY REPRESENTS <u>revised</u> and CEOLCY <u>added</u> . For Watershed 187, monthly P for Nov. and Dec. for 1951 were transposed in initial publication (Ref. 1), <u>revised</u> values are shown; P and Q for June 1961 <u>reduced</u> in magnitude. For Watershed 192 monthly Q for April 1940 and annual total in Ref. 1 are <u>revised</u> upward.
		26.32-5	152	Graphic scale for watersheds 5 and 92 published in Ref. 4 was incorrect, map page <u>revised</u> .
		26.38-1,26.39-1	165,167	CEOLCY <u>repeated</u> for watersheds 174 and 194.
Oklahoma	Chickasha	69.1,2,4,7,8,9 69.10,11,12,13	396-423 424-439	Data <u>begins</u> Oct. 1961 on 4 main stem reaches of Washita River and 2 subwatersheds; in latter part of 1962 on 4 other subareas.
South Dakota	Newell	65.14-1	369	Monthly Q totals for April and May 1959 in Ref. 4 <u>revised</u> .
		65.15-1	371	Monthly Q total for July 1958 <u>revised</u> to 1.242 in. from 1.240, in Ref. 4 and 5. Rounded annual total of 2.29 in. <u>unchanged</u> . Daily P of .45 in. shown in Ref. 5 for 8-23-60 should be <u>deleted</u> . Monthly and annual totals <u>remain the same</u> .
Vermont	North Danville	67.1-1,67.2-1	383,386	CEOLCY description <u>added</u> for W-1 and W-2.
Virginia	Blacksburg	13.6-1 to 13.15-1	59 65 62 69 72 75 78 81 84,87	<u>Revised</u> explanations of errors in footnote descriptions of Normal P in Ref. 4: For Claytor Dam, Radford, Va. (Thorne Creek, 13.6); for Blacksburg, Va. (Brush Creek, 13.8); and in Ref. 5: For Blacksburg, Va. (Crab Creek, 13.7); Danville, Va. (Powells Creek, 13.9); Halifax, Va. (Little Winns Creek, 13.10); Emporia, Va. (Rocky Run Branch, 13.11); Culpeper, Va. (Pony Mountain Branch, 13.12); Luray, Va. (Chub Run, 13.13); Louisa, Va. (Fosters Creek, 13.14), and Bedford, Va. (Chestnut Branch, 13.15).
		66.1-1,66.1-3	374,373	AREA, SOILS, EROSION, INSTRUMENTATION, and WATERSHED CONDITIONS and topographic map from Ref. 4 <u>revised</u> for W-1 and CEOLCY <u>added</u> .
		66.2-1,66.2-3	377,376	AREA, SOILS, SURFACE DRAINAGE, INSTRUMENTATION, WATERSHED CONDITIONS and topographic map from Ref. 4 <u>revised</u> for W-2 and CEOLCY <u>added</u> .
		66.4-1,66.5-1	379,381	SOILS, SURFACE DRAINAGE, INSTRUMENTATION, and WATERSHED CONDITIONS from Ref. 4 <u>revised</u> for watersheds W-4 and W-5 and CEOLCY <u>added</u> .
West Vir- ginia	Moorefield	66.1-1,66.1-3	374,373	AREA, SOILS, EROSION, INSTRUMENTATION, and WATERSHED CONDITIONS and topographic map from Ref. 4 <u>revised</u> for W-1 and CEOLCY <u>added</u> .
Wisconsin	LaCrosse	32.4-1	177	AREA was erroneously reported as 3.06 ac. on p. 225 of Ref. 5. Correct area <u>remains</u> 2.95 ac.

^{1/} References 1, 2, and 3 generally cover years 1924-55; Ref. 4, 1956-59; and Ref. 5, 1960-61.

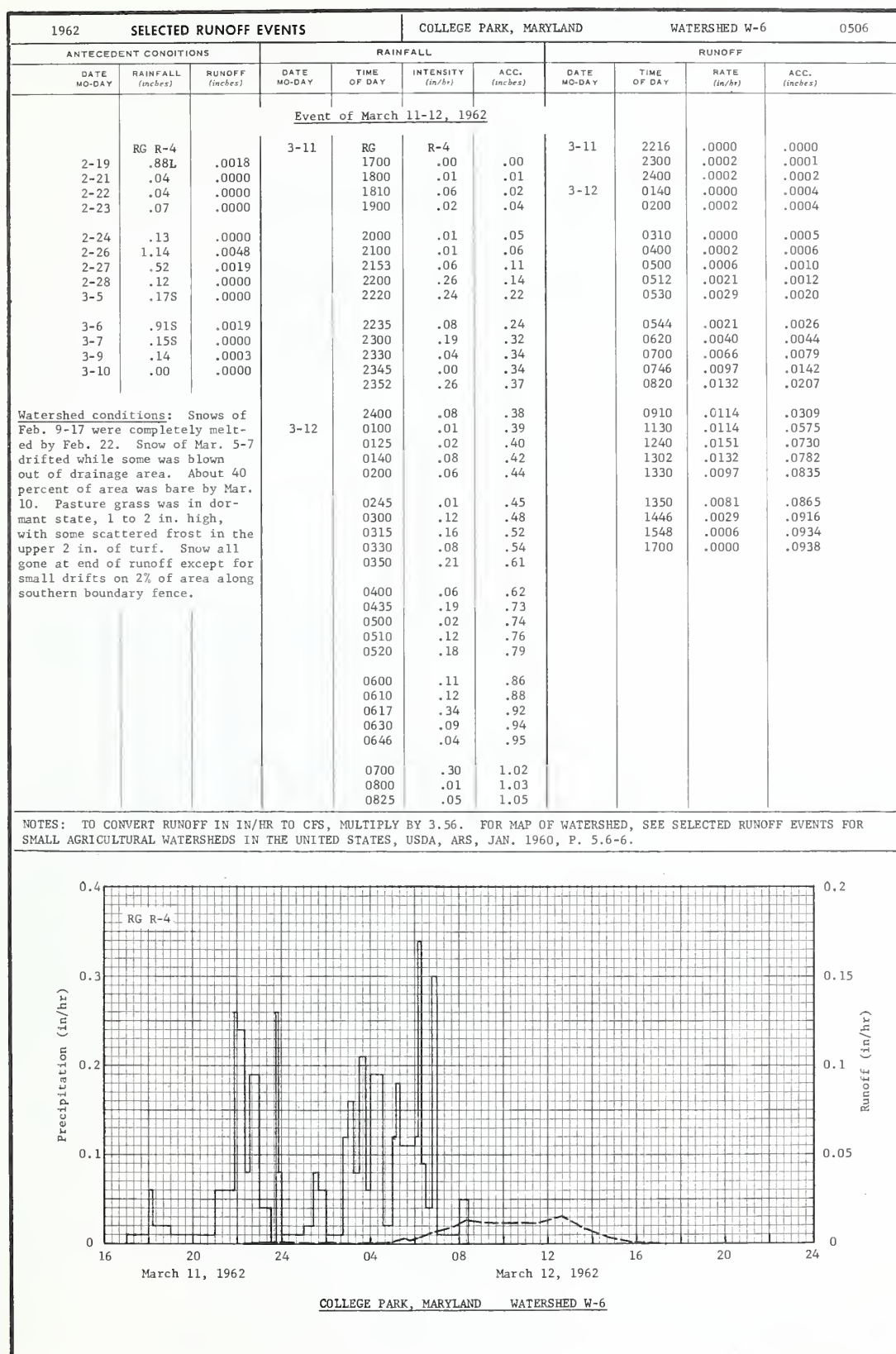


**WATERSHED DATA BY LOCATION NUMBER
AND
DECIMAL PAGING**

[5.6-1 TO 69.13-4, A TOTAL OF 420 DATA SHEETS]

For location by States and Land Resource Areas
and Regions, see U.S. Index Map, page 12.

MONTHLY PRECIPITATION AND RUNOFF (inches)						COLLEGE PARK, MARYLAND AREA— 3.53 ACRES								WATERSHED W-6 0506		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{1/} Q	1.84 .01	4.00 .01	4.05 .10	2.50 T	3.17 .03	3.24 .02	1.75 T	.09 .00	3.32 .01	3.21 .01	6.15 .02	2.90 T	36.22 .21			
STA AV ^{2/} (40-62) Q	2.79 .15	2.58 .08	3.67 .06	3.19 .03	3.87 .06	3.96 .14	3.88 .18	4.58 .25	3.23 .12	2.96 .13	3.42 .25	3.02 .13	41.15 1.58			
MEAN P ^{3/} 74 YR	3.18	2.95	3.59	3.51	3.90	3.86	4.04	6.45	3.40	2.89	2.73	3.03	41.53			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962	5-23	.07	5-23	.02	3-12	.03	3-12	.07	3-12	.09	3-11	.09	3-11	.09	3-6	.10
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962	11-8 1943	4/3.09	7-17 1945	.95	11-8 1943	1.54	11-8 1943	1.90	11-8 1943	1.93	11-8 1943	1.93	11-8 1943	1.93	11-2 1943	1.97
NOTES: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Pasture did not receive usual fertilization in spring; moderately grazed from Apr. to Aug. by 11 Angus steers; pasture mowed to 3 in. for control of excess growth and weeds June 4 and July 30; animals removed because forage ceased growing and turned brown by Aug. 20; bluegrass recovered and was 5 to 10 in. high by Oct. 29, but had no fall grazing. 1/ Precipitation from rain gage R-4. Water equivalent of snowfall, inches: Jan. (.04), Feb. (1.68), Mar. (1.23), Nov. (.50) and Dec. (1.51). 2/ Precipitation and runoff records began Sept. 1940; discontinued Jan. 1, 1963. 3/ Mean P based on 74-yr (1889-1962) U. S. Weather Bureau record period at College Park, Md. 4/ Previous maximum discharge, listed for 1954, in Maximum Annual Flows from Small Agricultural Watersheds in the United States, June 1958, has been revised to .36 in/hr (from 3.85) by deducting estimated outside inflow to watershed. See revised table below.																
MONTHLY PRECIPITATION AND RUNOFF (inches): (Revised) Changed values <u>underlined</u> .																
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1945 P Q	2.99 1.45	2.89 .07	1.12 .01	2.99 .03	4.69 .28	5.41 .80	13.09 2.75	2.84 .45	4.60 .16	1.23 T	4.65 .32	<u>5.59</u> .49	<u>52.09</u> 6.81			
1946 P Q	1.65 T	2.74 .01	1.97 T	1.35 .00	5.89 .02	3.49 .07	5.07 .54	2.71 .03	3.05 .04	<u>2.42</u> T	1.32 .00	2.00 .01	<u>33.66</u> .72			
1951 P Q	2.63 .02	2.71 .10	2.99 .01	4.04 .12	2.11 T	10.51 .99	1.88 .02	.72 T	2.69 .07	1.76 T	5.08 .08	4.51 .79	41.63 <u>2.20</u>			
1952 P Q	4.58 T	1.91 .00	4.31 T	7.68 .03	6.93 .05	3.32 T	3.48 .04	6.05 .12	5.00 .94	.55 T	7.34 .80	3.25 .01	54.40 <u>1.99</u>			
1953 P Q	3.73 .04	2.49 T	7.57 .75	4.81 .01	7.24 .24	1.84 T	2.31 T	3.17 .12	4.19 .05	2.67 .01	<u>1.97</u> T	3.54 .05	<u>45.53</u> <u>1.27</u>			
1954 P Q	2.14 T	.88 .00	3.76 T	3.26 .01	2.34 T	3.21 .17	2.35 .11	5.93 .04	1.48 T	3.91 .01	2.08 T	3.11 .00	34.45 <u>.34</u>			
1955 P Q	.28 .00	3.28 .16	3.90 T	3.04 T	1.91 T	4.99 .05	.37 .00	14.59 .69	1.10 T	5.28 .20	1.68 T	.22 .00	40.64 <u>1.10</u>			
ANNUAL MAXIMUM DISCHARGES (in/hr) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (in.) FOR SELECTED TIME INTERVALS: (Revised)5/																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1951	6-3	<u>.87</u>	6-3	<u>.56</u>	6-3	<u>.67</u>	6-3	<u>.68</u>	6-3	<u>.68</u>	12-20	.78	12-20	.78	6-3	<u>.82</u>
1952	9-1	<u>1.23</u>	9-1	<u>.73</u>	9-1	<u>.88</u>	9-1	<u>.94</u>	8-31	<u>.94</u>	8-31	<u>.94</u>	8-31	<u>.94</u>	8-31	<u>.94</u>
1953	8-8	<u>.33</u>	3-25	<u>.17</u>	3-25	<u>.28</u>	3-25	<u>.48</u>	3-25	<u>.51</u>	3-25	<u>.51</u>	3-24	<u>.55</u>	3-18	<u>.55</u>
1954	6-15	<u>.36</u>	6-15	<u>.16</u>	6-15	<u>.16</u>	6-15	<u>.16</u>	6-15	<u>.16</u>	6-15	<u>.16</u>	6-15	<u>.16</u>	6-15	<u>.16</u>
1955	8-18	<u>6/24</u>	8-13	<u>.14</u>	8-13	<u>.21</u>	8-13	<u>.24</u>	8-12	<u>.42</u>	8-12	<u>.49</u>	8-12	<u>.49</u>	8-12	<u>.61</u>
5/ Changed values underlined. 6/ Peak rate also equalled on 10-14-55.																
SOILS: (Revision) Coastal plain soils; derived from unconsolidated silty, sandy, and gravelly materials or deposits in which some compact layers have developed in certain subsoils, the position of which largely determines the degree of restriction, if any, in the profile drainage and water storage capacity of specific soils.																
Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage							
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability								
Sassafras sandy loam	48	10	Weak <u>fine</u> <u>granular</u>	Moderately rapid	Moderate medium subangular blocky	Moderate	30	Rapid	Medium							
Chillum loam	32	9	Weak <u>fine</u> <u>granular</u>	Moderate	Moderate medium subangular blocky	Moderate	28	Moderately slow	Medium							
Beltsville silt loam	14	6	Weak <u>fine</u> <u>granular</u>	Moderate	Moderate medium subangular blocky	Moderately slow	18	Slow	Slow							
Sassafras loam (Clayey substratum)	6	20	Weak <u>fine</u> <u>granular</u>	Moderate	Moderate medium subangular blocky	Moderate	<u>46</u>	Moderate	Medium							
GEOLOGY: Watershed lies near the westward extent of the Coastal Plain sediments of Cretaceous age which dip approximately 50 feet to the mile southeast. Alluvial fan deposits comprise 100 percent of the surface area. For a general description of the surface and underlying geologic formations and their hydrologic properties, see lower table on page 5.7-1 of this volume, which is deemed to apply to this watershed as well as to the adjacent W-7 watershed.																
GENERALLY REPRESENTS: (Revision) Northern Coastal Plain problem area (A1) redesignated Northern Coastal Plain land resource area (S-149) in southern New Jersey, northern Delaware, eastern Maryland and eastern Virginia.																



MONTHLY PRECIPITATION AND RUNOFF (inches)						COLLEGE PARK, MARYLAND						WATERSHED W-7		0507		
						AREA— 3.52 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ^{1/}	1.84	4.00	4.05	2.50	3.17	3.24	1.75	.09	3.32	3.21	6.15	2.90	36.22		
	Q	.01	.14	.99	.01	.03	.03	.01	.00	.01	.02	.17	.01	1.43		
STA AV ^{2/}	P	2.79	2.58	3.67	3.19	3.87	3.96	3.88	4.58	3.23	2.96	3.42	3.02	41.15		
(40-62)	Q	.10	.12	.23	.11	.05	.12	.14	.34	.15	.16	.27	.16	1.95		
MEAN P ^{3/}		3.18	2.95	3.59	3.51	3.90	3.86	4.04	4.45	3.40	2.89	2.73	3.03	41.53		
74 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	3-12	.14	3-12	.13	3-12	.25	3-12	.61	3-11	.87	3-11	.98	3-11	.98	3-6	.99
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962	8-10 1942	2.42	10-15 1942	.98	10-15 1942	1.54	11-8 1943	1.92	11-8 1943	1.97	11-8 1943	1.97	10-15 1942	1.99	10-14 1942	2.05
NOTES: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Pasture did not receive usual fertilization in spring; moderately grazed from Apr. to Aug. by 11 Angus steers; pasture mowed to 3 in. for control of excess growth and weeds June 4 and July 30; animals removed because forage ceased growing and turned brown by Aug. 20; bluegrass recovered and was 5 to 10 in. high by Oct. 29, but had no fall grazing. 1/ Precipitation from rain gage R-4. Water equivalent of snowfall, in inches: Jan. (.04), Feb. (1.68), Mar. (1.23), Nov. (.50), and Dec. (1.51). 2/ Precipitation and runoff records began Sept. 1940; discontinued Jan. 1, 1963. 3/ Mean P based on 74-yr (1889-1962) U. S. Weather Bureau record period at College Park, Maryland.																
MONTHLY PRECIPITATION AND RUNOFF (inches): (Revised items underlined).																
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1945		2.99	2.89	1.12	2.99	4.69	5.41	13.09	2.84	4.60	1.23	4.65	<u>5.59</u>	<u>52.09</u>		
	Q	.63	.00	T	T	.08	.34	2.06	.45	.05	.00	.19	.73	4.53		
1946	P	1.65	2.74	1.97	1.35	5.89	3.49	5.07	2.71	3.05	<u>2.42</u>	1.32	2.00	<u>33.66</u>		
	Q	T	T	T	.00	T	.01	.46	.01	.01	T	.00	T	.49		
1953	P	3.73	2.49	7.57	4.81	7.24	1.84	2.31	3.17	4.19	2.67	<u>1.97</u>	3.54	<u>45.53</u>		
	Q	.22	T	1.75	.03	.40	T	T	.13	.01	.01	.01	.04	2.60		
SOILS: (Revision) Coastal plain soils; derived from unconsolidated silty, sandy, and gravelly materials or deposits in which compact layers have generally developed at varying depths in the subsoil, the position of which largely determines the degree of restriction, if any, in the profile drainage and lowers the water storage capacity of the profile.																
Soil	Per- cent of area	Topsoil			Perme- ability	Subsoil		Substratum		Internal drainage						
		Avg. depth (in.)	Structure	Structure		Perme- ability	Avg. depth to (in.)	Perme- ability								
Beltsville silt loam	72	8	Weak <u>fine granular</u>	Moderate	Moderate medium subangular blocky	Moderately slow	19	Slow	Slow							
<u>Sassafras loam</u> (clayey substratum)	16	28	Weak <u>fine granular</u>	Moderate	Moderate medium subangular blocky	Moderate	48+	Moderate	Medium							
Leonardtown silt loam	6	6	Weak <u>fine granular</u>	Moderate	Moderate medium platy	Slow	15	Very slow	Very slow							
Croom gravelly loam	6	8	Weak <u>fine granular</u>	Moderate	- -	-	8	Moderate	Medium							
GEOLOGY: Watershed lies near the westward extent of the Coastal Plain sediments which dip approximately 50 feet to the mile southeast. Alluvial fan deposits comprise 100 percent of the surface area.																
System	Formation	Thickness in water- shed (ft) ^{2/}	Description, structure, and hydrologic properties of formations													
Cretaceous	Patapsco alluvial fan deposit	35 - 45	Gravel, sand, silt, and clay, poorly sorted. Gravel is mostly hard, subround quartz and quartzite, with some rounded sandstone. Some of sandstone is friable. Maximum diameter of gravel is about 18 inches. Sand occurs with the gravel and in beds and lenses and clay occurs mostly as lenses, as much as 5 feet thick, and 1000 feet in diameter. Formation generally permeable; some perched water tables may exist on top of clay lenses.													
Cretaceous	Unconformity Patuxent (not exposed)	15 - 20	Gravel, sand, silt, and clay. Gravel well sorted, round to subround, quartz and quartzites; sandstone rare. Sand light brown, subangular quartz; silt and clay in lenses, mixed with sand and gravel, generally white kaolinite. Upper part of formation cemented with iron, 2 feet or less thick; thicker sections in gravel. Formations generally permeable; iron cemented layers and clay lenses may restrict downward percolation of water.													
Early Paleozoic	Unconformity Wissahickon/ ^{1/} Sykesville 1/ (not exposed)		Zone 1: Residual clay; sticky, red-brown, micaceous; impervious to water. Zone 2: Saprolite; spongy, porous, reddish material from which much of the feldspars in the original mica-schist have been altered to clay and removed; saprolite retains the original structure the parent rock; upper contact sharp, grades downward into Zone 3. Formation is porous; water generally concentrated at contact with unweathered rock. Zone 3: Unweathered rock; mica-schist, with veins, stringers, and nodules of quartz. Formation is impervious, even along fractures.													
	(Zone 1)	2 - 5														
	(Zone 2)	5 - 40														
	(Zone 3)	Unknown														
Source of data: After C. F. Withington, U. S. Geological Survey, personal communication (1965). 1/ Undifferentiated. 2/ Approximate thickness.																
GENERALLY REPRESENTS: (Revision) Northern Coastal Plain problem area (A1) redesignated Northern Coastal Plain land resource area (S-149) in southern New Jersey, northern Delaware, eastern Maryland and eastern Virginia.																

1962 DAILY AIR TEMPERATURE (degrees F)												COLLEGE PARK, MARYLAND T-3 TEMP. STA. ON W-7												0507	
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	38	31	30	21	39	22	59	38	59	52	85	64	86	61	86	62	96	61	75	43	55	35	65	35	
2	35	19	25	18	30	12	48	33	52	43	86	60	81	62	86	58	86	61	74	48	53	35	61	44	
3	39	25	32	22	35	13	50	32	75	42	70	61	68	59	82	60	75	62	71	47	45	34	57	39	
4	59	33	58	24	47	17	55	27	79	48	71	64	77	57	79	62	72	60	70	64	51	29	54	40	
5	38	32	64	33	37	25	63	33	80	44	77	64	83	57	87	64	79	59	75	56	41	32	56	42	
6	54	32	36	16	36	29	62	46	83	53	80	58	84	62	90	64	71	44	73	56	45	26	46	32	
7	54	39	25	8	38	26	72	54	74	51	81	57	90	64	88	69	75	44	74	55	52	24	40	32	
8	47	25	37	17	41	25	59	50	66	45	82	56	91	68	92	65	78	45	76	56	59	35	46	32	
9	31	22	30	24	36	25	66	43	64	38	82	56	87	64	80	62	82	53	74	58	60	42	39	23	
10	22	7	29	9	43	33	65	45	68	33	85	60	82	57	73	56	88	68	74	50	61	44	29	19	
11	22	4	23	5	44	34	49	44	66	45	84	68	88	60	79	54	86	57	84	49	56	32	25	13	
12	31	10	25	17	55	38	47	41	70	40	75	70	87	64	86	53	85	51	86	54	49	28	19	9	
13	38	15	37	10	50	39	52	40	62	49	70	58	86	66	84	57	90	51	76	47	47	32	23	9	
14	43	16	46	25	45	36	52	37	81	53	76	57	77	63	85	58	87	60	76	46	51	30	27	15	
15	57	35	36	26	47	33	45	33	93	59	77	60	81	62	86	56	84	52	66	54	59	26	28	12	
16	40	26	31	23	43	30	46	29	80	57	85	61	70	64	90	63	78	61	79	61	64	32	38	29	
17	39	24	44	30	48	31	52	27	81	56	86	61	78	65	90	65	66	60	74	52	53	43	46	30	
18	30	19	38	25	48	30	57	37	93	60	90	64	79	64	85	57	71	53	68	42	43	32	46	30	
19	30	22	*39	28	52	27	58	36	94	68	91	64	84	58	89	54	77	52	70	41	43	27	40	30	
20	37	24	*39	*29	60	37	48	39	92	65	70	65	88	61	99	70	63	46	74	40	45	33	44	27	
21	40	22	*41	*23	47	41	64	40	87	65	79	58	89	68	93	70	63	39	73	52	51	40	27	18	
22	53	38	*35	*31	56	38	83	43	78	55	80	55	85	64	89	63	66	36	65	40	55	34	34	20	
23	53	26	*46	*34	54	36	69	48	77	55	87	64	85	64	82	58	67	46	67	45	44	32	40	16	
24	40	25	*45	*36	54	31	67	38	84	61	86	66	80	61	82	56	66	44	56	40	50	31	25	18	
25	58	31	*51	*23	57	33	81	42	83	55	85	64	76	60	83	59	66	50	50	30	43	29	28	20	
26	46	38	43	*29	59	38	86	52	84	64	83	63	81	54	87	60	65	57	45	32	42	29	43	25	
27	49	34	43	39	60	37	86	58	74	54	81	64	78	52	87	63	62	56	57	32	46	34	33	24	
28	32	24	54	39	60	38	81	61	63	56	78	58	82	53	85	63	69	49	70	39	54	37	38	22	
29	32	21	--	--	73	43	82	64	75	60	78	55	77	59	89	61	68	44	58	36	61	40	35	23	
30	53	14	---	---	76	56	80	59	80	63	82	60	80	66	93	61	72	44	52	38	60	40	35	8	
31	26	9	---	---	72	59	---	---	85	64	---	---	88	67	94	60	---	---	46	40	---	---	15	4	
AV.	41	24	39	24	50	33	63	42	77	53	81	61	82	61	86	61	75	52	69	47	51	33	38	24	
MEAN	32.4		31.2		41.2		52.5		65.1		70.9		71.8		73.6		63.6		57.6		42.2		31.0		
STA AV	41	23	44	25	51	31	64	40	73	50	81	59	86	63	84	61	77	55	67	45	55	34	43	25	

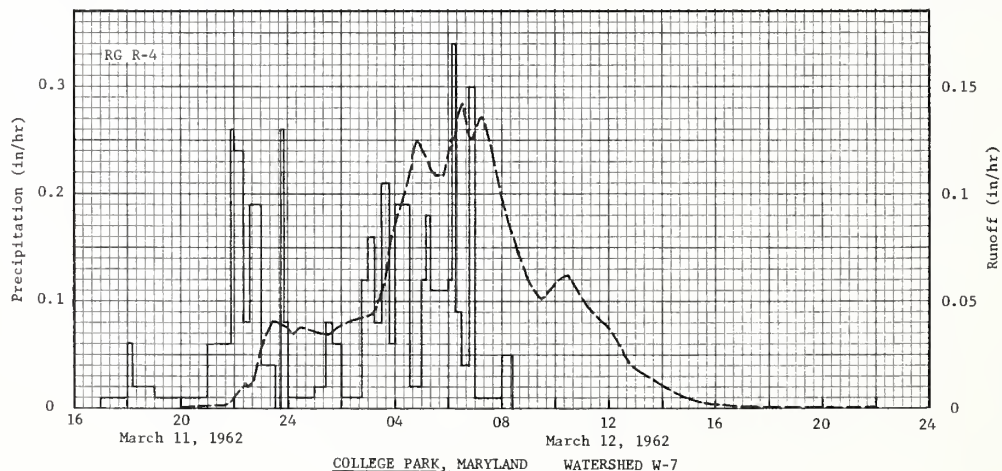
NOTES: DAILY TEMPERATURES RECORDED BY HYGROTHERMOGRAPH WERE ADJUSTED TO MAXIMUM AND MINIMUM THERMOMETER READINGS WHEN NECESSARY. *CHART FOR FEB. 19-26 BLEW OUT OF SHELTER AND WAS LOST; BELTSVILLE PLANT STA. 5 RECORD SUBSTITUTED. STA AV ARE FOR 23-YR (1940-62) RECORD PERIOD AT T-1 ON W-1 AND T-3 ON W-7. T-3 RECORD DISCONTINUED JAN. 1, 1963.

1940-62 AVERAGE MONTHLY AIR TEMPERATURE (degrees F)												COLLEGE PARK, MARYLAND T-1 AND T-3 ^{1/} ON W-1 AND W-7												0501,7	
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1940	34	16	45	27	51	31	63	39	76	52	81	59	87	62	79	61	74	51	62	41	54	35	49	30	
1941	39	25	40	23	48	26	70	44	77	49	80	58	84	64	85	58	82	55	72	47	60	32	46	27	
1942	40	21	39	21	53	32	67	39	76	52	81	59	86	63	81	60	78	53	67	46	56	34	40	24	
1943	40	25	46	26	54	30	60	36	74	52	86	64	87	63	90	62	76	53	65	42	55	32	43	22	
1944	43	24	43	25	49	29	60	39	79	53	82	57	88	60	84	59	76	56	64	41	53	33	39	22	
1945	33	18	43	24	66	37	66	41	70	45	81	57	82	61	83	59	78	58	66	40	55	36	37	22	
1946	42	24	45	25	60	37	63	38	72	50	80	56	84	60	79	57	79	54	70	45	58	36	47	26	
1947	46	28	37	17	46	25	65	38	71	48	78	55	82	60	84	64	75	55	72	49	52	33	41	22	
1948	32	15	43	21	55	32	64	41	72	51	81	59	86	64	84	62	77	53	63	43	59	38	45	28	
1949	48	31	50	30	53	33	62	39	75	52	83	61	88	69	84	64	75	52	71	50	55	33	47	27	
1950	54	33	43	27	49	28	60	37	70	50	80	57	82	61	84	59	72	54	67	45	55	32	39	22	
1951	45	23	44	24	52	30	63	38	73	49	80	59	86	63	86	60	79	53	69	46	50	29	46	26	
1952	45	28	47	28	50	29	64	43	72	49	86	61	89	65	83	62	78	54	65	38	54	35	44	27	
1953	47	28	50	27	54	34	63	40	76	56	83	61	89	64	86	62	79	53	70	44	56	33	47	27	
1954	41	22	51	28	51	31	68	42	69	47	82	57	88	60	81	61	82	58	70	48	51	33	43	27	
1955	40	25	45	24	54	34	65	44	74	50	78	56	90	67	84	65	74	55	68	43	51	29	38	20	
1956	37	22	45	27	48	28	61	37	71	46	81	58	82	63	83	61	75	53	66	47	54	35	51	33	
1957	37	21	45	29	50	32	66	42	75	50	84	62	87	61	83	60	77	58	62	41	54	36	47	29	
1958	39	23	35	19	44	31	63	42	71	49	77	55	85	66	81	62	76	53	66	44	55	37	38	19	
1959	39	19	44	23	53	29	65	42	76	52	81	59	84	65	85	67	80	59	68	50	54	35	47	31	
1960	42	28	43	28	39	22	69	42	70	48	81	58	84	61	86	64	78	57	65	43	56	32	36	16	
1961	35	16	43	27	54	32	60	35	71	47	82	58	87	64	85	64	83	61	69	46	56	39	42	27	
1962	41	24	39	24	50	33	63	42	77	53	81	61	82	61	86	61	75	52	69	47	51	33	38	24	
MEAN	32.1		34.2		41.0		51.9		61.6		69.9		74.3		72.5		66.1								

1962 SELECTED RUNOFF EVENTS			COLLEGE PARK, MARYLAND				WATERSHED W-7 0507			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of March 11-12, 1962										
2-19	RG R-4	.0028	3-11	RG	R-4		3-11	2000	.0000	.0000
2-21	.88L	.0000		1700	.00	.00		2040	.0013	.0004
2-22	.04	.0000		1800	.01	.01		2140	.0021	.0021
2-23	.07	.0000		1810	.06	.02		2154	.0030	.0027
				1900	.02	.04		2204	.0066	.0035
2-24	.13	.0000		2000	.01	.05		2222	.0115	.0062
2-26	1.14	.1115		2100	.01	.06		2225	.0098	.0068
2-27	.52	.0245		2153	.06	.11		2242	.0133	.0100
2-28	.12	.0000		2200	.26	.14		2259	.0265	.0157
3-5	.17S	.0000		2220	.24	.22		2310	.0346	.0213
3-6	.91S	.0055		2235	.08	.24		2326	.0408	.0313
3-7	.15S	.0000		2300	.19	.32		2400	.0377	.0536
3-9	.14	T		2330	.04	.34	3-12	0012	.0346	.0608
3-10	.00	.0000		2345	.00	.34		0030	.0377	.0716
				2352	.26	.37		0128	.0291	.1039
			3-12	2400	.08	.38		0151	.0318	.1156
				0100	.01	.39		0220	.0408	.1331
				0125	.02	.40		0312	.0439	.1698
				0140	.08	.42		0338	.0583	.1920
				0200	.06	.44		0356	.0834	.2132
				0245	.01	.45		0419	.0977	.2480
				0300	.12	.48		0438	.114	.2815
				0315	.16	.52		0440	.119	.2854
				0330	.08	.54		0450	.125	.3057
				0350	.21	.61		0530	.1082	.3834
				0400	.06	.62		0548	.1082	.4159
				0435	.19	.73		0600	.119	.4386
				0500	.02	.74		0616	.125	.4711
				0510	.12	.76		0620	.136	.4798
				0520	.18	.79		0634	.142	.5123
				0600	.11	.86		0654	.125	.5568
				0610	.12	.88		0716	.136	.6046
				0617	.34	.92		0732	.125	.6394
				0630	.09	.94		0800	.0977	.6914
				0646	.04	.95		0838	.0701	.7445
				0700	.30	1.02		0900	.0583	.7680
				0800	.01	1.03		0930	.0510	.7954
				0825	.05	1.05		1000	.0583	.8227
								1028	.0620	.8507
								1114	.0473	.8926
								1200	.0377	.9252
								1224	.0291	.9386
								1256	.0193	.9515
								1405	.0098	.9682
								1506	.0040	.9752
								1540	.0021	.9770
								1640	.0006	.9783
								2200	.0000	.9799

Watershed conditions: Snows of Feb. 9-17 were all melted by Feb. 22. Snow of Mar. 5-7 drifted to moderate extent and was about half melted by Mar. 10. Pasture grass largely in dormant condition 1 to 2 inches high, with scattered frost in upper 2 in. of turf. Snow all gone at end of runoff period, except $\frac{1}{2}$ of area in several small drifts.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.549. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 5.6-6.



MONTHLY PRECIPITATION AND RUNOFF ^{1/2/} (inches)						VERO BEACH, FLORIDA (NORTH, MAIN & SOUTH CANALS) WATERSHED W-1 8.1 AREA—49,915 ACRES (78.0 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P	.55	.84	2.53	2.78	1.81	7.79	5.99	7.20	8.16	.49	3.14	.48	41.76
	Q	1.01	.77	1.22	1.17	.94	2.04	1.93	2.54	4.16	1.51	1.98	1.28	20.55
STA AV ^{3/}	P	2.32	2.42	3.87	4.20	3.62	5.95	5.54	5.90	8.10	6.12	2.24	1.19	51.47
(51-62)	Q	1.58	1.21	1.86	1.56	1.29	2.24	1.86	1.85	3.85	4.05	1.62	1.16	25.95
MEAN P ^{4/}		2.35	2.35	3.04	3.40	4.28	5.87	5.52	5.67	7.87	7.34	2.76	2.01	52.46
62 YR														

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-25	.04	9-25	.04	9-25	.08	9-25	.20	9-25	.37	9-24	.58	9-23	.97	9-20	2.14

MAXIMUMS FOR PERIOD OF RECORD																
1951 to 1962	9-25 1960	.105	9-25 1960	.105	9-25 1960	.205	9-25 1960	.612	9-25 1960	1.22	9-25 1960	2.37	9-25 1960	4.51	9-22 1960	15.31

Notes: Quality of records: P, excellent; Q, good to poor. 1/ All monthly precipitation is Thiessen weighted averages of 5 rain gages. 2/ Includes artesian irrigation inflow during winter drought periods. 3/ Precipitation and runoff (U. S. Geological Survey) records began Apr. 1951; part year 1951 monthly records included. 4/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Ft. Pierce, Fla. Monthly records for July 1933 and for Feb. 1950 and 1951 were estimated from nearby station.

SLOPES: 100% is in 0-2% class.

SOILS: (Revision) Predominantly fine sand surface layers which have above average infiltration and low runoff until saturated by rising water table during storms. Generally underlain at varying depths by organic hardpan or clay or marl of variable thicknesses.

Soil	Per- cent of area	Topsoil		Subsoil		Substratum		Internal drainage	
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)		Perme- ability
Leon-Immokalee fine sand	50	4	Structureless fine single grain	Rapid	Structureless (hardpan)	Moderate	36	Rapid	Medium
Felda-Manatee loamy fine sand	26	8	Weak fine granular	Moderate	Weak fine granular (massive when wet)	Slow	30	Slow	Slow
Pompano fine sand	16	2	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow
Adamsville fine sand	5	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Moderate	Medium
Sunniland-Brad- enton fine sand	2	4	Structureless fine single grain	Rapid	Weak subangular blocky	Moderate	36 to 84	Slow	Medium
St. Lucie-Pomello fine sand	1	4	Structureless fine single grain	Very rapid	Structureless fine single grain	Very rapid	60	Very rapid	Very rapid

EROSION: 1 - 100% (Little or no erosion).

LAND CAPABILITY:	Class	I	II	III	IV
	Percent of area	0	0	20	80

GEOLOGY: Pleistocene (Pamlico) and Recent sediments, which consist chiefly of gray to brown medium grained quartzitic sand, cover a predominate portion of the watershed. The shallow Pleistocene sand and shell beds of the Pamlico, Anastasia, and Fort Thompson Formations constitute a fairly permeable upper aquifer that contains nonartesian ground water, except under local conditions where fine grained sand or clay lenses cause artesian conditions. Irrigation water is derived chiefly from deep wells that penetrate the Floridian aquifer at approximately 350 feet below the surface. The aquifer is made up of the following formations in their ascending order: Avon Park and Lake City Limestone (Middle Eocene), Ocala Limestone (Upper Eocene), Suwannee Limestone (Oligocene), Tampa Limestone and permeable portions at the bottom of the Hawthorne Formation that are in hydrologic contact with the rest of the aquifer (Miocene). It is suspected that little if any recharge to the lower aquifer occurs in the vicinity of the watershed. Source of Data: G. G. Parker, et al., Water Resources of Southeastern Florida, U. S. Geological Survey Water Supply Paper 1255, Washington, D. C., 1955.

GENERALLY REPRESENTS: (Revision) Flatwoods of Coastal Plain problem area (A2) changed to Southern Florida Flatwoods land resource area (U-155).

1962 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA						
						WATERSHED W-1						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.05	.00	.00	.00	.00	.23	.13	.01	.00	.00	.00	.00
2	.00	.00	.00	.14	.03	.13	.00	.15	.10	.07	.04	.00
3	.00	.00	.00	.02	.00	.00	.00	.04	.54	.00	.00	.00
4	.00	.00	.00	.00	.71	.00	.00	.00	.16	.00	.04	.00
5	.00	.01	.01	.01	.59	.00	.00	.32	.02	.05	.00	.05
6	.17	.05	.00	.01	.14	.00	.77	.06	.05	.00	.00	.00
7	.00	.00	.00	2.11	.00	1.08	.00	.64	.16	.00	.00	.00
8	.00	.00	.00	.00	.00	.20	.48	.29	.17	.00	.87	.00
9	.00	.00	.00	.00	.00	.26	.58	.34	.00	.00	1.90	.05
10	.00	.49	.00	.00	.00	.05	.08	.58	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.14	.71	.01	.00	.00	.00	.00
12	.02	.00	.00	.04	.00	.39	.90	.00	.19	.01	.00	.00
13	.00	.00	.04	.00	.14	.77	.08	.20	.00	.20	.00	.00
14	.04	.00	.00	.00	.00	.87	.00	1.24	1.64	.00	.00	.00
15	.00	.00	.00	.00	.00	.26	.16	.25	.00	.00	.00	.00
16	.00	.29	.12	.00	.00	1.05	.00	.18	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.22	.00	.22	.05	.04	.00	.00
18	.00	.00	.00	.00	.00	.00	.13	.04	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.10	.14	.41	.00	.00	.00
20	.08	.00	.00	.00	.00	.00	.01	.05	1.42	.00	.00	.00
21	.08	.00	.00	.00	.17	.34	.64	.00	.45	.00	.07	.00
22	.00	.00	.34	.00	.00	.15	.00	.15	.22	.14	.22	.00
23	.00	.00	.43	.00	.00	.41	.00	.31	1.59	.00	.00	.00
24	.00	.00	.00	.00	.00	.05	.20	.45	.01	.00	.00	.20
25	.00	.00	1.36	.00	.00	.21	.00	.19	.01	.00	.00	.20
26	.00	.00	.23	.45	.00	.00	.03	.31	.02	.00	.00	.00
27	.06	.00	.00	.00	.00	.00	.11	.21	.11	.00	.00	.00
28	.05	.00	.00	.00	.00	.00	.42	.24	.00	.00	.00	.00
29	.00	-----	.00	.00	.00	.00	.35	.05	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.98	.02	.30	.86	.00	.00	.00
31	.00	-----	.00	-----	.05	-----	.09	.25	-----	.00	-----	.00
TOTAL	.55	.81	2.53	2.78	1.81	7.79	5.99	7.20	8.16	.49	3.14	.48
STA AV	2.32	2.42	3.87	4.20	3.62	5.95	5.54	5.90	8.10	6.12	2.24	1.19

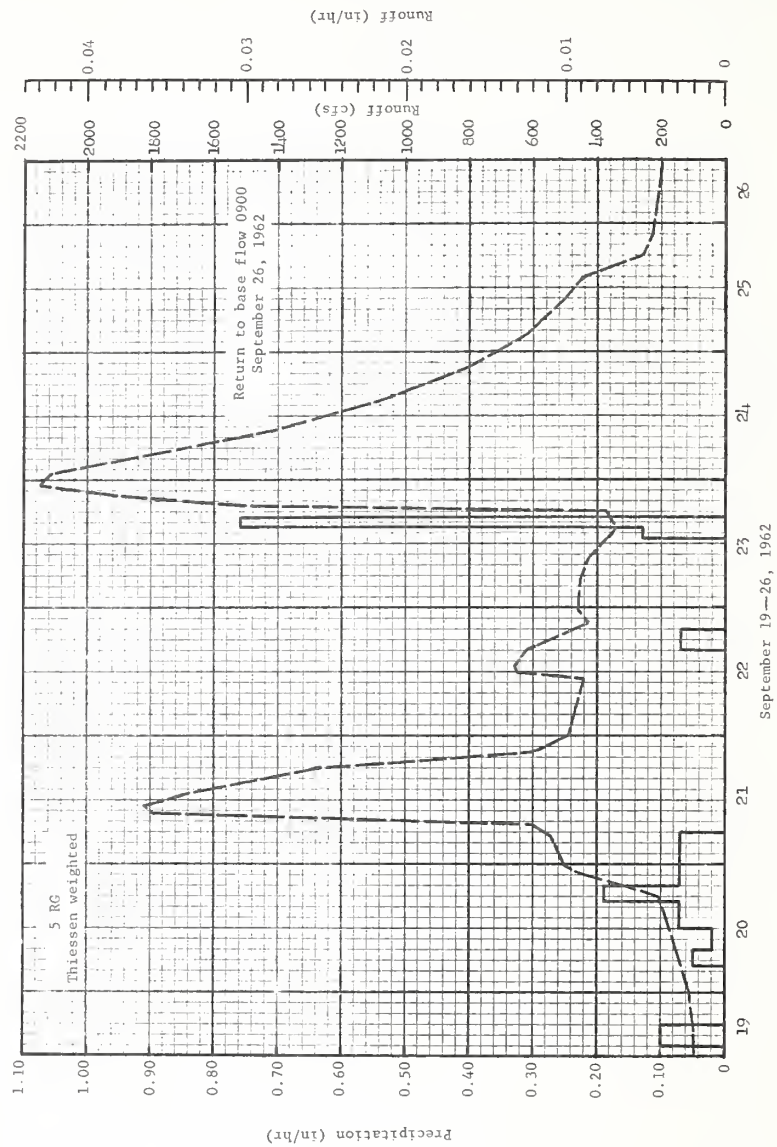
NOTES: THIESSEN WEIGHTED, USING 5 RAIN GAGES. STA AV IS FOR PERIOD FROM APRIL 1951 THROUGH 1962.

1962 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA						
						WATERSHED W-1						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	74.4	71.2	19.9	66.9	74.6	63.2	183.7	114.4	234.0	423.0	120.0	84.9
2	55.4	42.1	21.1	37.5	22.6	99.2	134.0	95.4	148.0	207.0	129.0	85.4
3	60.5	14.7	32.1	68.4	26.4	101.4	110.8	25.5	233.0	161.0	124.0	84.5
4	81.4	25.1	73.2	58.4	61.9	53.8	84.8	51.6	242.0	183.0	132.0	90.0
5	79.4	87.2	110.7	62.4	218.0	21.3	51.0	123.4	149.7	182.0	115.6	96.5
6	72.5	100.5	99.1	66.9	216.0	46.6	70.5	79.0	150.1	116.0	51.0	88.9
7	69.5	56.3	76.8	203.0	129.8	132.8	131.5	103.0	124.8	94.3	36.0	62.4
8	71.8	45.1	58.8	341.0	113.8	152.4	127.3	183.0	128.4	76.1	133.0	28.9
9	81.3	49.1	57.5	74.0	66.9	116.3	215.6	171.0	129.4	33.3	944.0	33.8
10	81.3	86.6	70.7	43.2	64.9	48.3	220.1	170.0	125.4	74.7	415.0	53.2
11	53.6	93.8	71.7	104.7	64.6	99.8	273.0	244.0	71.4	95.7	70.1	97.2
12	23.1	56.6	81.2	86.2	65.9	166.8	226.0	216.0	43.4	86.4	170.4	96.8
13	54.1	81.5	66.1	59.4	66.2	231.8	225.0	159.0	91.4	82.7	149.9	18.9
14	113.2	51.5	26.3	72.1	65.7	308.3	186.0	406.0	688.0	137.4	131.4	20.9
15	111.3	37.5	44.0	71.4	68.0	384.4	175.0	458.0	505.0	86.3	98.0	205.1
16	72.3	52.3	59.5	73.4	68.6	423.0	92.5	243.9	145.1	44.0	71.4	147.3
17	54.2	70.8	89.4	53.1	55.8	242.0	102.2	264.0	167.8	52.5	88.4	141.9
18	77.2	76.6	71.7	43.3	38.3	138.8	101.4	181.0	122.1	72.1	108.7	137.4
19	72.3	57.6	78.2	65.3	35.7	86.1	78.4	181.5	92.8	90.6	93.0	135.2
20	74.8	52.5	74.0	77.9	44.9	70.5	26.2	145.9	208.4	81.9	64.0	67.9
21	74.7	57.9	51.0	71.1	55.9	124.8	243.7	112.8	994.0	78.4	65.7	36.5
22	67.6	61.8	49.8	61.4	30.9	123.5	112.2	112.2	481.0	45.2	118.0	128.9
23	59.6	58.9	177.0	42.1	22.0	161.0	28.8	111.2	830.0	87.3	106.5	64.3
24	45.6	55.8	145.5	22.2	22.7	181.0	81.4	125.9	1,243.0	111.5	88.5	100.3
25	70.1	55.5	199.0	27.4	27.9	67.6	141.4	149.6	412.0	63.9	82.0	95.3
26	68.1	53.9	258.0	26.3	25.5	177.5	93.9	145.9	197.0	52.2	76.5	68.3
27	44.6	38.5	136.9	93.9	21.5	126.2	76.6	175.2	183.0	80.2	98.5	53.7
28	91.6	19.4	79.7	150.5	73.0	78.8	78.0	213.6	191.0	111.9	97.4	60.5
29	50.1	-----	57.4	126.8	56.3	81.5	83.4	161.2	169.0	83.8	82.3	95.2
30	71.1	-----	59.2	104.3	17.3	179.7	144.6	157.5	216.0	22.7	84.9	113.1
31	77.6	-----	64.3	-----	43.7	-----	133.0	241.6	-----	44.7	-----	89.9
MEAN	68.5	57.5	82.4	81.8	63.4	142.9	150.3	171.6	290.5	102.0	138.2	86.6
INCHES	1.01	.77	1.22	1.17	.94	2.04	1.93	2.54	4.16	1.51	1.98	1.28

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0004769. DAILY DISCHARGE IS COMBINED FLOWS OF NORTH, MAIN, AND SOUTH CANALS, FROM RECORDS OF U. S. GEOLOGICAL SURVEY.

1962 SELECTED RUNOFF EVENTS			VERO BEACH, FLORIDA				WATERSHED W-1				8.1
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches) <u>1</u> /	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
9-19	<u>2</u> / .00	<u>3</u> / .0283	Event of September 19-26, 1962								
			9-19	5 RG	AVG <u>1</u> /						
				1400	.00	.00	9-19	1600	92.8	.0000	
				1800	.10	.40		2400	109	.0160	
				0500	.00	.40	9-20	1800	208.4	.0727	
				0800	.05	.55		2400	507	.1154	
			9-20	1200	.02	.63	9-21	0500	546	.1677	
				1700	.07	.98		0730	601	.1962	
				2000	.19	1.55		0930	1791	.2437	
				9-21	0600	.07	2.25		1100	1815	.2974
9-22	1600	.00		2.25		1330	1678	.3841			
9-23	2000	.07	2.53		1800	1263	.5156				
	1300	.00	2.53		2100	600	.5711				
	1500	.13	2.79		2400	490	.6036				
	1700	.76	4.31	9-22	1030	442	.7008				
					1200	652	.7171				
Watershed conditions:											
Approximate land use: (from SCS)											
40% in citrus groves (85% of											
groves irrigated from canals											
and artesian wells)											
32% in improved pasture											
22% unimproved range and forest											
6% urban development											

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00001987. FOR MAP OF WATERSHED SEE PAGE 8.1-7 IN SELECTED RUN-OFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960. 1/ALL PRECIPITATION THIESSEN WEIGHTED, USING 5 RAIN GAGES. 2/PRIOR TO 1400. 3/RUNOFF PRIOR TO 1600 ON SEPT. 19, 1962. FOR 30-DAY ANTECEDENT P AND Q SEE PRECEDING TABLES. 4/RETURN TO NORMAL BASE FLOW.



VERO BEACH, FLORIDA WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)							VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-2 AREA—63,170 ACRES (98.7 SQ. MILES)							8.2
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P	.53	.40	5.72	2.17	5.80	11.25	7.74	9.27	6.49	1.21	2.31	.36	51.25
	Q	.02	.02	.03	.08	.10	1.58	5.98	2.94	6.20	.58	.13	.09	17.75
STA A-2/ (55-62)	P	1.98	2.00	4.27	2.78	4.99	7.70	6.20	6.20	7.26	4.29	1.16	1.54	50.46
	Q	.50	.54	1.36	.29	.49	2.23	1.99	2.05	3.93	2.66	.35	.17	16.56
MEAN P-3/ 14 YR		1.61	1.72	2.79	3.40	3.95	7.10	6.06	6.08	7.18	4.92	1.70	1.45	47.96

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	7-14	.021	7-14	.021	7-14	.042	7-14	.125	7-14	.248	7-14	.48	7-14	.92	7-12	2.61

MAXIMUMS FOR PERIOD OF RECORD																
1956 to 1962	10-16 1956	.11	10-16 1956	.11	10-16 1956	.21	10-16 1956	.62	10-16 1956	1.25	10-16 1956	2.28	10-16 1956	4.16	10-16 1956	8.05

Notes: Quality of records: P, excellent; Q, good. 1/ All precipitation Thiessen weighted, using 7 rain gages. 2/ Precipitation and runoff (U. S. Geological Survey) records began July 1955. 3/ Mean P based on 44-yr (1919-62) record period at Okeechobee Hurricane Gate 6, Florida.

SLOPES: 100% is in 0-2% class.

SOILS: (Revision) Predominantly fine sand surface which is very friable and has above average infiltration rates and little surface runoff until it becomes saturated. Generally underlain at varying depths by organic hardpan or clay or marl layers of variable thickness and hardness.

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Leon-Immokalee fine sand	65	4	Structureless fine single grain	Rapid	Structureless (hardpan)	Moderate	36	Rapid	Medium
Plummer fine sand	8	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	40	Slow	Slow
Felda-Manatee loamy fine sand	6	8	Weak fine granular	Moderate	Weak fine granular (massive when wet)	Slow	30	Slow	Slow
Sunniland-Brad- enton fine sand	4	4	Structureless fine single grain	Rapid	Weak subangular blocky	Moderate	36-84	Slow	Medium
Pompano-Char- lotte fine sand	3	2	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow
Rutledge fine sand	3	8	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	45	Slow	Slow
Fresh water swamp & marsh	3	3	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	40	Slow	Slow
St. Lucie-Pomello fine sand	2	4	Structureless fine single grain	Very rapid	Structureless fine single grain	Very rapid	60	Very rapid	Very rapid
Everglades peat	2	12	Fibrous	Rapid	Structureless	Rapid	48	Slow	Slow
Adamsville fine sand	2	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Moderate	Medium
Delray fine sand	1	12	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow
Parkwood fine sand	1	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	30	Slow	Slow

EROSION: 1 - 100% (Little or no erosion with small areas of +, deposition).

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV
	Percent of area	0	3	9	88

GEOLOGY: Undifferentiated marine terrace sands of Pleistocene age are found as surface deposits. Generally the sands are white to gray in the upper part, and grade into tan, orange and red at depth. They are sub-rounded to sharp, non-frosted detrital sediments characteristic of marine deposits. In the field it is impossible to separate these terrace sands except on the basis of their respective altitudes. The strand line of the Penholoway Terrace is about 68 feet, m.s.l., and that of the Talbot occurs at about 40 feet, m.s.l. Inasmuch as the upper sub-watershed W-3 composes an integral part of area, it is discussed as part of the whole 98.7 square mile watershed. The Penholoway Terrace, which covers approximately 40 per cent of the area, lies in the northeastern part of the watershed. It forms a broad, flat, little dissected plain that slopes gently to the south where it is abruptly broken by the wave cut cliff of the lower Talbot surface. Approximately 15 per cent of the watershed is occupied by this marked 20 to 25 ft. step-like feature. The Talbot Terrace occupies the remaining 45 per cent of the watershed area. It is remarkably flat; drainage is sluggish; sloughs, shallow ponds, and swamps are abundant. The outer limit of the Talbot Terrace is generally indefinitely marked along the lower section of Taylor Creek by the 22 ft. strand line of the old Pamlico sea. Source of Data: G. G. Parker and N. D. Hay, Geology and Ground Water of the Kissimmee River - Lake Okeechobee Area, Florida, Proc. Soil Sci. Soc. Fla., Vol. V-b, 1943, Gainesville, Fla.

GENERALLY REPRESENTS: (Revision) Flatwoods of Coastal Plain problem area (A2) changed to Southern Florida Flatwoods land resource area (U-155).

Cooperative Research Project of USDA, Florida Agricultural Experiment Station,
U. S. Geological Survey, and the Central and Southern Florida Flood Control District

1962 DAILY AIR TEMPERATURE (degrees F)												VERO BEACH, FLORIDA												WATERSHED W-2												8.2	
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC														
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN													
1	68	62	78	46	87	58	87	72	90	64	89	71	88	72	93	79	92	76	87	73	80	61	70	56													
2	71	37	78	47	90	58	82	57	91	67	85	66	88	72	90	77	91	79	93	72	80	56	72	58													
3	63	28	80	45	88	59	76	50	93	65	88	73	89	71	92	78	90	78	91	75	69	51	79	54													
4	64	35	84	48	79	54	75	50	92	67	92	72	90	72	91	77	90	75	92	75	77	60	75	54													
5	74	56	81	47	79	52	78	64	88	65	92	71	92	72	90	77	88	77	90	75	71	45	78	62													
6	84	70	83	59	73	36	77	62	84	62	94	70	92	76	93	77	94	79	92	71	74	46	73	39													
7	85	57	79	43	59	36	83	70	79	63	91	73	92	76	93	76	92	77	91	68	78	61	61	41													
8	73	58	78	51	65	34	76	65	85	62	90	71	93	76	91	76	93	77	92	72	78	64	56	42													
9	77	38	84	56	75	46	84	68	87	63	92	73	87	75	91	78	91	77	90	74	79	71	70	53													
10	78	54	87	63	84	56	90	65	93	67	94	72	87	73	90	75	93	77	90	73	82	51	61	36													
11	77	54	78	43	90	63	92	70	95	70	88	74	91	75	91	76	93	77	92	71	70	42	54	29													
12	65	40	70	40	91	68	89	67	92	67	85	73	90	73	90	77	92	75	88	70	73	42	66	44													
13	53	30	74	47	90	63	89	69	92	72	84	73	88	77	89	77	90	77	88	71	75	59	58	22													
14	68	57	83	57	76	59	82	55	89	71	85	74	90	77	91	77	92	77	88	72	71	54	53	24													
15	77	56	85	55	70	62	77	50	89	68	88	75	90	76	88	77	87	74	89	71	75	55	57	36													
16	86	55	85	48	92	56	81	60	82	67	88	74	91	77	89	75	89	74	99	71	76	57	64	36													
17	82	48	84	62	64	37	77	47	90	67	84	72	94	77	93	76	92	74	88	69	78	54	70	42													
18	79	48	85	60	72	44	78	53	88	68	90	73	93	78	93	76	93	77	85	67	80	54	71	43													
19	83	55	88	60	76	44	80	52	87	66	92	73	92	75	92	77	93	76	81	60	83	59	78	48													
20	84	60	87	64	80	45	84	60	89	65	91	72	94	77	82	78	82	73	85	58	84	59	80	47													
21	80	58	86	58	82	65	82	64	92	67	89	75	91	79	93	77	77	70	85	58	85	64	80	52													
22	82	59	87	60	85	66	81	58	95	70	86	74	93	79	91	76	83	74	88	67	84	69	81	51													
23	85	56	88	63	92	65	80	61	94	69	86	71	93	75	93	78	89	77	86	70	74	49	83	61													
24	88	60	89	70	71	54	85	61	92	71	92	73	93	77	92	77	90	71	85	58	76	61	82	59													
25	85	56	89	70	80	65	87	60	95	74	93	75	93	78	91	77	88	74	82	56	78	60	82	66													
26	85	54	87	58	75	63	87	66	92	68	90	75	93	79	90	76	89	73	83	51	80	55	83	61													
27	84	63	89	58	80	52	86	63	95	72	92	76	93	78	92	76	91	74	79	55	71	40	85	54													
28	87	64	89	58	75	43	90	70	93	74	89	74	94	74	92	77	90	70	79	58	66	54	85	64													
29	77	49	---	---	79	56	90	70	94	71	92	74	92	78	92	75	84	66	81	60	66	55	82	58													
30	71	41	---	---	78	60	89	69	92	74	91	75	91	76	93	76	90	76	82	61	68	57	80	56													
31	73	42	---	---	84	65	---	---	91	73	---	---	94	74	90	76	---	---	81	68	---	---	71	45													
AV.	77	52	83	55	79	54	83	62	90	68	89	73	91	76	91	77	90	75	87	67	76	56	72	48													
MEAN	64.3		69.1		66.9		72.4		79.2		81.1		83.5		83.8		82.3		77.0		65.8		60.1														
STA AV	74	51	77	54	78	56	83	63	88	69	90	74	91	75	91	75	90	74	87	67	82	60	75	51													

NOTES: STA AV. COVERS PERIOD JULY 1, 1956 THROUGH 1962.

1962 DAILY PRECIPITATION (inches)							VERO BEACH, FLORIDA				WATERSHED W-2				8.2
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.04	.00	.00	.00	.01	.34	.87	.20	.33	.31	.00	.00			
2	.01	.00	.00	.28	.32	.02	.02	.02	.27	.00	.01	.00			
3	.00	.00	.00	.00	.00	.15	.00	.03	.22	.53	.00	.00			
4	.00	.00	.00	.00	1.68	.00	.02	.01	.04	.01	.02	.00			
5	.00	.00	.00	.00	.64	.32	.00	.44	.00	.00	.00	.07			
6	.31	.10	.00	.01	.07	.00	.10	.68	.02	.00	.00	.03			
7	.00	.00	.00	.93	.00	.01	.00	.57	.75	.00	.00	.00			
8	.00	.00	.00	.00	.00	.01	.68	.10	.02	.00	1.02	.00			
9	.00	.00	.00	.00	.00	1.34	1.36	.29	.06	.00	1.16	.11			
10	.00	.25	.00	.00	.00	.69	.24	.22	.00	.00	.00	.00			
11	.00	.00	.00	.00	.30	.09	1.56	.89	.32	.00	.00	.00			
12	.03	.00	.00	.31	.00	.19	.00	.10	.26	.00	.01	.00			
13	.00	.00	.00	.00	.00	.11	.66	.56	.01	.00	.00	.00			
14	.04	.00	.00	.00	.00	.06	.07	.03	.43	.00	.00	.00			
15	.02	.00	.00	.00	.00	.04	.01	.42	.00	.01	.00	.00			
16	.00	.03	.09	.00	.02	.97	.00	.11	.00	.00	.00	.00			
17	.00	.00	.00	.00	.00	.31	.05	.05	.00	.18	.00	.00			
18	.00	.00	.00	.00	.00	.00	.11	.01	.00	.00	.00	.00			
19	.06	.00	.00	.00	.00	.55	.12	.15	.42	.00	.00	.00			
20	.00	.00	.00	.00	.00	.50	.10	.00	1.71	.00	.00	.00			
21	.00	.00	.00	.00	1.40	.93	.00	.02	1.21	.00	.02	.00			
22	.00	.00	.05	.00	.53	.57	.00	.51	.24	.12	.07	.00			
23	.00	.00	.36	.00	.00	.08	.17	.01	.07	.00	.00	.00			
24	.00	.00	.01	.00	.00	.82	.00	.24	.00	.00	.00	.12			
25	.00	.02	1.81	.00	.00	.19	.43	.27	.00	.00	.00	.00			
26	.00	.00	.35	.64	.00	.00	.06	.21	.00	.00	.00	.00			
27	.00	.00	.00	.00	.00	.03	.13	.93	.06	.00	.00	.00			
28	.02	.00	.00	.00	.00	.10	.03	.58	.00	.00	.00	.00			
29	.00	-----	.00	.00	.00	1.15	.05	.83	.00	.00	.00	.00			
30	.00	-----	1.05	.00	.00	1.68	.26	.56	.00	.00	.00	.03			
31	.00	-----	.00	-----	.83	-----	.64	.23	-----	.05	-----	.00			
TOTAL	.53	.10	3.72	2.17	5.80	11.25	7.74	9.27	6.49	1.21	2.31	.36			
STA AV	1.98	2.00	4.27	2.78	4.99	7.70	6.20	6.29	7.26	4.29	1.16	1.54			

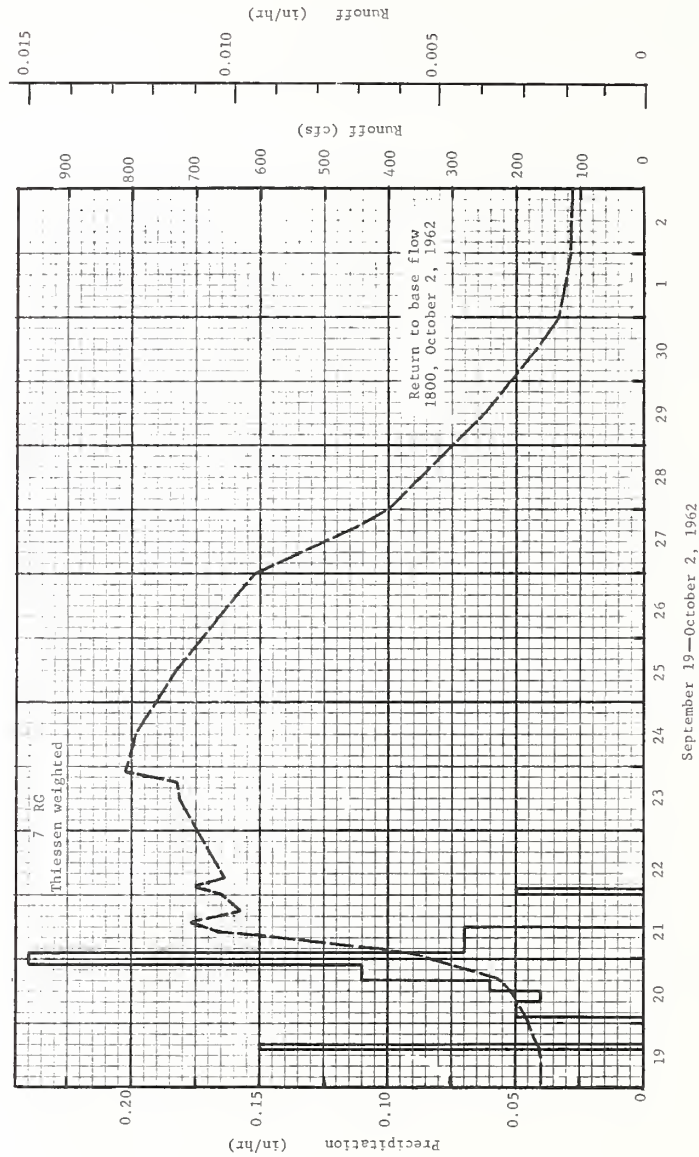
NOTES: THIESSEN WEIGHTED, USING 7 RAIN GAGES. STA AV. BASED ON PERIOD JULY 1, 1955 THROUGH 1962.

1962 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA WATERSHED W-2 8.2						
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	2.0	1.3	.9	6.2	2.7	18.0	440.0	64.0	1,070.0	130.0	5.3	4.8
2	1.6	1.3	1.0	6.0	2.4	21.0	912.0	57.0	1,080.0	115.0	5.3	4.8
3	1.5	1.5	1.0	5.4	2.4	20.0	1,190.0	51.0	1,100.0	125.0	5.2	4.8
4	1.5	1.6	1.0	5.4	2.6	15.0	1,040.0	54.0	1,100.0	150.0	5.2	4.7
5	1.4	1.7	1.0	5.4	6.0	11.0	824.0	58.0	1,000.0	170.0	5.2	6.0
6	1.3	1.8	1.0	5.4	19.0	8.5	620.0	62.0	900.0	150.0	5.2	6.9
7	1.7	2.0	1.0	9.5	19.0	6.9	478.0	63.0	800.0	125.0	5.2	7.2
8	1.9	2.1	1.0	25.0	15.0	5.8	357.0	81.0	650.0	100.0	5.2	7.6
9	1.8	2.1	1.0	27.0	17.0	5.2	302.0	142.0	550.0	85.0	21.0	7.9
10	1.8	2.2	1.0	22.0	18.0	23.0	425.0	204.0	450.0	70.0	27.0	8.1
11	1.8	2.3	1.2	15.0	19.0	89.0	467.0	226.0	350.0	54.0	28.0	8.4
12	2.0	2.4	1.2	9.3	18.0	100.0	662.0	223.0	300.0	45.0	27.0	8.6
13	1.9	2.5	1.3	8.5	15.0	105.0	1,140.0	251.0	270.0	35.0	26.0	8.8
14	2.0	2.2	1.6	6.9	11.0	116.0	1,280.0	414.0	300.0	27.0	25.0	8.9
15	2.0	2.2	1.6	5.4	7.8	110.0	1,160.0	445.0	210.0	22.0	21.0	9.0
16	1.8	2.0	1.3	4.6	6.0	108.0	992.0	409.0	190.0	18.0	18.0	9.1
17	1.6	1.8	1.4	4.6	5.2	149.0	739.0	366.0	175.0	15.0	16.0	9.2
18	1.5	1.6	1.3	4.3	4.4	171.0	554.0	344.0	160.0	13.0	14.0	9.2
19	1.4	1.5	1.2	3.8	4.0	167.0	420.0	331.0	155.0	11.0	12.0	9.3
20	1.4	1.2	1.0	3.6	3.6	156.0	327.0	323.0	225.0	10.0	11.0	9.3
21	1.4	1.2	.8	3.4	3.3	154.0	258.0	298.0	582.0	9.0	9.6	9.2
22	1.2	1.0	.8	3.1	4.9	161.0	214.0	261.0	674.0	8.0	8.5	9.1
23	1.1	1.0	.8	2.6	12.0	176.0	180.0	228.0	739.0	7.2	7.5	9.0
24	1.0	.9	1.3	2.5	13.0	204.0	156.0	217.0	787.0	6.6	7.0	9.0
25	1.0	1.2	2.2	2.3	10.0	302.0	138.0	228.0	716.0	6.2	6.5	8.8
26	1.0	1.1	7.5	2.5	7.2	380.0	125.0	248.0	644.0	5.9	6.0	8.6
27	1.0	1.0	12.0	3.5	5.6	394.0	111.0	220.0	500.0	5.6	5.6	8.4
28	1.1	.9	8.9	3.4	4.6	362.0	99.0	251.0	350.0	5.4	5.3	8.2
29	1.2	-----	6.0	3.3	4.4	327.0	95.0	302.0	250.0	5.3	5.1	8.0
30	1.2	-----	4.6	3.0	4.0	327.0	86.0	512.0	170.0	5.3	5.0	7.8
31	1.3	-----	5.2	-----	6.6	-----	75.0	872.0	-----	5.3	-----	7.6
MEAN	1.50	1.61	2.36	7.10	8.83	140.0	512.0	252.0	548.0	49.7	11.8	7.95
INCHES	.02	.02	.03	.08	.10	1.58	5.98	2.94	6.20	.58	.13	.09

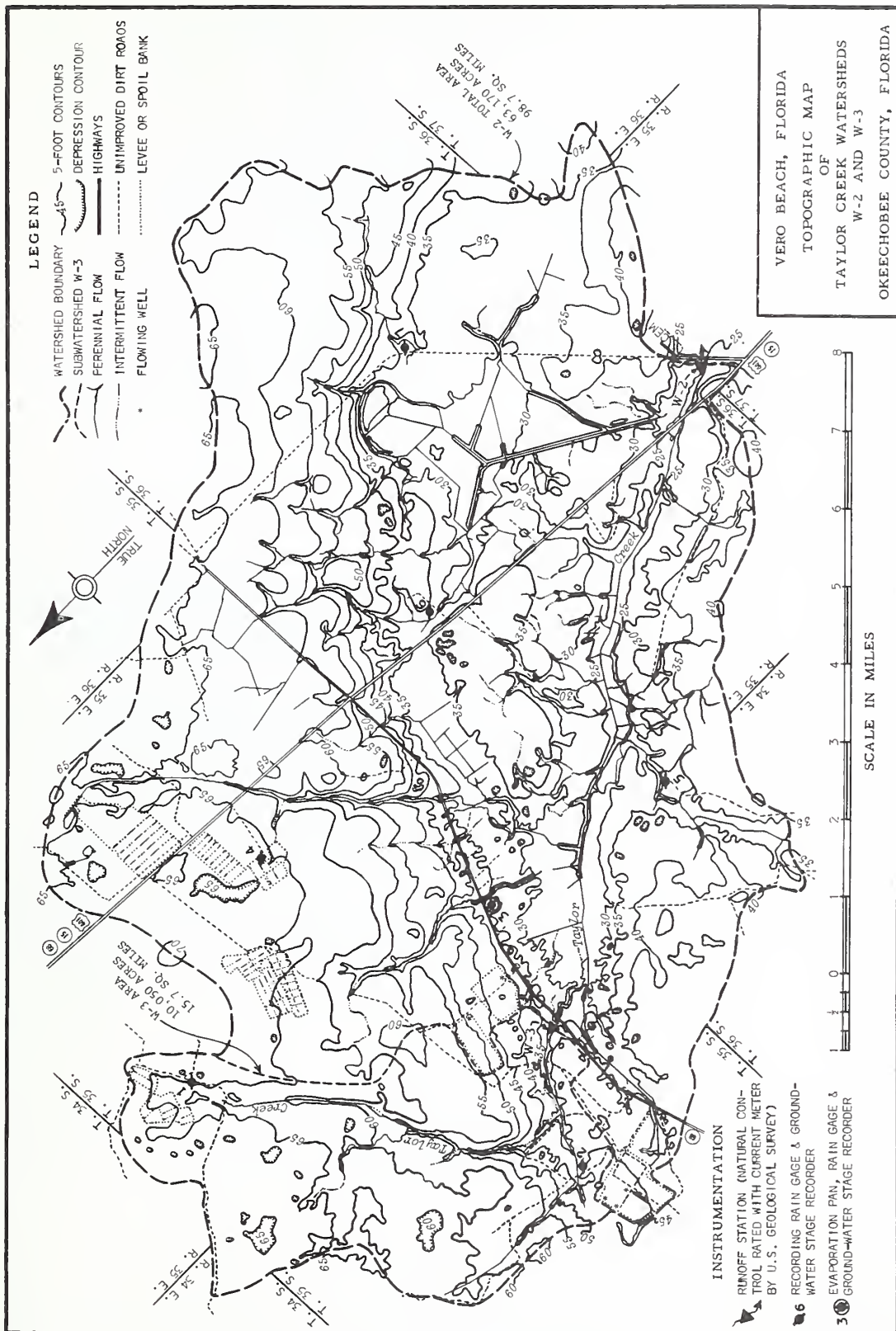
NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0003768. DAILY DISCHARGE DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.

1962 SELECTED RUNOFF EVENT						VERO BEACH, FLORIDA WATERSHED W-2 8.2						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-OAY	RAINFALL (inches) 1/	RUNOFF (inches)	DATE MO-OAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of September 19-October 2, 1962												
			7 RG			AVG 1/						
Watershed conditions: Approximate land use: (from SCS) 31% in improved pasture 1% in citrus 53% in range and forest 15% in miscellaneous	9-19	.00 2/ .0290	9-19	1400	.00	.00	9-19	1200	160	.0000		
				1600	.15	.30		2400	180	.0320		
			9-20	0200	.00	.30	9-20	1200	206	.0684		
				0800	.05	.60		1600	225	.0819		
				1200	.04	.76	9-21	0200	360	.1278		
				1600	.06	1.00		0600	490	.1515		
				2200	.11	1.66		1000	665	.1908		
			9-21	0200	.24	2.62		1400	705	.2338		
				1200	.07	3.32		1800	630	.2757		
				2400	.00	3.32		2400	660	.3365		
			9-22	0200	.05	3.42	9-22	0300	700	.3685		
								0600	655	.4004		
							9-23	1200	725	.7254		
								1800	730	.7940		
								2200	810	.8423		
							9-24	1200	795	1.0187		
							9-25	1200	730	1.3060		
							9-26	1200	650	1.5660		
								2400	608	1.6845		
							9-27	1800	445	1.8333		
								2400	400	1.8731		
							9-29	1200	250	2.0568		
							9-30	1200	170	2.1359		
								2400	135	2.1647		
							10-1	2400	118	2.2123		
							10-2	1800	3/ 112	2.2448		

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0001570. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P.8.2-4. 1/ ALL PRECIPITATION THIENSEN WEIGHTED, USING 7 RAIN GAGES. 2/ RUNOFF PRIOR TO 1200 ON SEPT. 19, 1962. FOR ANTECEDENT P AND Q SEE TABLES ON PRECEDING PAGE. 3/ RETURN TO NORMAL BASE FLOW.



VERO BEACH, FLORIDA WATERSHED W-2



MONTHLY PRECIPITATION AND RUNOFF (inches)							VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-3 AREA—10,050 ACRES (15.7 SQ. MILES)							8.3
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962 P	.66	.59	2.92	1.75	5.08	9.20	7.88	10.77	6.64	1.05	2.99	.35	49.88	
Q	.01	.00	.03	.03	.18	.77	3.10	4.78	5.17	.45	.13	.03	14.68	
STA AV ² /P (55-62) Q	1.98	1.77	4.57	3.62	4.93	7.04	6.51	6.25	6.62	4.43	1.02	1.39	49.93	
MEAN P ³ / _{44 YR}	1.61	1.72	2.79	3.40	3.95	7.10	6.06	6.08	7.18	4.92	1.70	1.45	47.96	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-2	.035	9-2	.035	9-2	.070	9-2	.204	9-2	.400	9-2	.770	9-21	.992	8-28	2.78

MAXIMUMS FOR PERIOD OF RECORD															
19 56 to 10-15	.25	10-15	.24	10-15	.47	10-15	1.35	10-15	2.55	10-15	3.14	10-15	6.21	10-15	8.57
19 62 1956		1956		1956		1956		1956		1956		1956		1956	

Notes: Quality of records: P, excellent; Q, good. ¹/ All precipitation Thiessen weighted, using 2 rain gages. ²/ Precipitation and runoff (U. S. Geological Survey) began Oct. 1955. ³/ Mean P based on 44-yr (1919-62) record period at Okeechobee Hurricane Gate 6, Florida.

SLOPES: 100% is in 0-2% class.

SOILS: (Revision) Predominantly fine sand surface which is very friable and has above average infiltration rates and little surface runoff until it becomes saturated. Generally underlain at about 3 feet by an organic hardpan of variable thickness and hardness.

Soil	Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability		
Leon-Immokalee fine sand	77	4	Structureless fine single grain	Rapid	Structureless (hardpan)	Moderate	36	Rapid	Medium	
Plummer fine sand	8	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	40	Slow	Slow	
Pompano-Char- lotte fine sand	5	2	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow	
Rutlege fine sand	4	8	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	45	Slow	Slow	
Adamsville fine sand	2	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Moderate	Medium	
Fresh water swamp & marsh	2	3	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	40	Slow	Slow	
St. Lucie-Pomello fine sand	1	4	Structureless fine single grain	Very rapid	Structureless fine single grain	Very rapid	60	Very rapid	Very rapid	
Delray fine sand	1	12	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow	

EROSION: 1 - 100% (Little or no erosion with small areas of +, deposition).

Class	I	II	III	IV
Percent of area	0	1	3	96

LAND CAPABILITY:

GEOLOGY: Sharp to sub-rounded marine sand grains of Pleistocene age cover the watershed. These sands are white to gray at the surface and grade into tan, orange, and red at depth. Approximately 80 per cent of the watershed is represented by terrace deposits of Penholoway age. These superficial sands form a broad, flat little dissected plain that slopes gently southward to its outer edge. It is marked by an abrupt drop of 20 to 25 feet to the strand line of the younger Talbot surface. The ground water level on the upper terrace is generally within 1.5 to 3 feet of the surface and shows very marked response to the local climatic conditions. Source of Data: G. G. Parker and N. D. Hay. Geology and Ground Water of the Kissimmee River - Lake Okeechobee Area, Florida, Proc. Soil.Sci. Soc. Fla., Vol. V-b, 1943, Gainesville, Fla.

GENERALLY REPRESENTS: (Revision) Flatwoods of Coastal Plain problem area (A2) changed to Southern Florida Flatwoods land resource area (U-155).

1962 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA WATERSHED W-3 8.3						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.02	.00	.00	.00	.05	.37	.33	.28	.43	.11	.00	.00
2	.05	.00	.00	.19	.64	.00	.00	.00	.47	.00	.00	.00
3	.00	.00	.00	.00	.00	.34	.00	.06	.00	.66	.00	.00
4	.00	.00	.00	.00	2.29	.00	.00	.06	.20	.00	.05	.00
5	.00	.00	.00	.00	.44	.27	.00	.80	.00	.00	.00	.05
6	.42	.20	.00	.00	.10	.00	.00	1.71	.10	.00	.00	.00
7	.00	.00	.00	.18	.00	.00	.00	.40	1.69	.00	.00	.00
8	.00	.00	.00	.00	.00	.06	.95	.09	.00	.00	1.04	.00
9	.00	.00	.00	.00	.00	.32	1.35	.04	.00	.02	1.60	.05
10	.00	.39	.00	.00	.00	.26	.73	.82	.00	.00	.00	.00
11	.00	.00	.00	.00	.27	.11	.65	.88	.13	.00	.00	.00
12	.00	.00	.00	.85	.00	.33	.00	.06	.20	.00	.03	.00
13	.00	.00	.00	.00	.00	.00	.86	.00	.08	.00	.00	.00
14	.08	.00	.00	.00	.00	.09	.00	.10	.00	.00	.00	.00
15	.05	.00	.00	.00	.00	.01	.00	.57	.00	.00	.00	.00
16	.00	.00	.15	.00	.00	.21	.00	.37	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.78	.22	.00	.00	.11	.00	.00
18	.00	.00	.00	.00	.00	.00	.31	.05	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.47	.46	.00	.32	.00	.00	.00
20	.00	.00	.00	.00	.00	.66	.30	.00	1.42	.00	.00	.00
21	.00	.00	.00	.00	1.12	.81	.00	.06	1.03	.00	.00	.00
22	.00	.00	.04	.00	.00	.51	.00	.45	.55	.09	.27	.00
23	.00	.00	.51	.00	.00	.06	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.13	.00	.69	.00	.00	.00	.18
25	.00	.00	1.63	.00	.00	.00	.28	.14	.00	.00	.00	.00
26	.00	.00	.20	.53	.00	.00	.00	.36	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.09	.00	.95	.02	.00	.00	.00
28	.08	.00	.00	.00	.00	.10	.00	.33	.00	.00	.00	.00
29	.00	-----	.00	.00	.00	1.67	.00	.77	.00	.00	.00	.00
30	.00	-----	.39	.00	.00	1.55	.85	.44	.00	.00	.00	.07
31	.00	-----	.00	-----	.19	.00	.65	.31	-----	.06	-----	.00
TOTAL	.66	.59	2.92	1.75	5.08	9.20	7.88	10.77	6.64	1.05	2.99	.35
STA AV	1.98	1.77	4.37	3.62	4.93	7.04	6.51	6.25	6.62	4.43	1.02	1.39

NOTES: THIESSEN WEIGHTED, USING 2 RAIN GAGES. STA AV. IS BASED ON PERIOD FROM OCT. 1, 1955 THROUGH 1962.

1962 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA WATERSHED W-3 8.3						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.0	.0	.0	3.2	.1	.5	175.0	5.4	176.0	7.8	.1	.6
2	.0	.0	.0	2.5	.1	.5	105.0	5.2	232.0	7.0	.1	.6
3	.0	.0	.0	1.6	.1	.5	33.0	4.2	142.0	36.0	.1	.6
4	.0	.0	.0	.8	.9	.3	15.0	3.4	76.0	67.0	.1	.5
5	.0	.0	.0	.5	36.0	.5	9.0	3.0	111.0	20.0	.1	.5
6	.0	.0	.0	.4	18.0	.5	5.8	8.5	101.0	12.0	.1	.5
7	.1	.0	.0	.4	7.7	.2	4.0	94.0	76.0	8.2	.1	.4
8	.1	.0	.0	.4	2.7	.2	3.0	85.0	178.0	5.3	.2	.4
9	.1	.0	.0	.4	1.6	.2	11.0	53.0	83.0	4.0	9.9	.4
10	.1	.0	.0	.4	1.1	.2	43.0	55.0	50.0	3.4	11.0	.4
11	.1	.0	.0	.5	.8	.4	99.0	124.0	38.0	2.8	5.6	.4
12	.1	.0	.0	.5	.6	.8	198.0	212.0	33.0	2.3	4.0	.4
13	.1	.0	.0	.5	.6	.9	88.0	130.0	51.0	2.0	3.0	.4
14	.1	.0	.0	.5	.4	1.0	152.0	78.0	28.0	1.8	2.4	.5
15	.1	.0	.0	.5	.4	1.0	60.0	58.0	21.0	1.6	2.0	.5
16	.1	.0	.0	.2	.3	1.1	33.0	113.0	15.0	1.4	1.8	.5
17	.1	.0	.0	.2	.3	1.8	19.0	138.0	13.0	1.2	1.7	.4
18	.1	.0	.0	.2	.3	4.6	27.0	66.0	11.0	1.2	1.4	.4
19	.1	.0	.0	.1	.2	2.6	42.0	41.0	9.1	1.2	1.3	.4
20	.1	.0	.0	.1	.2	1.8	76.0	28.0	21.0	1.0	1.2	.4
21	.1	.0	.0	.1	.3	6.7	52.0	20.0	248.0	.7	1.1	.4
22	.1	.0	.0	.1	.6	42.0	28.0	15.0	169.0	.6	1.4	.5
23	.1	.0	.0	.1	.7	32.0	15.0	12.0	127.0	.6	1.4	.5
24	.1	.0	.0	.1	.7	11.0	10.0	12.0	72.0	.6	1.4	.5
25	.1	.0	.0	.1	.6	5.3	7.2	29.0	41.0	.5	1.2	.5
26	.0	.0	.1	.1	.4	3.1	5.2	41.0	27.0	.4	.9	.4
27	.0	.0	1.6	.1	.3	2.1	4.0	42.0	19.0	.3	.8	.4
28	.0	.0	.7	.1	.3	1.8	3.1	135.0	14.0	.1	.7	.5
29	.0	-----	.4	.1	.3	49.0	2.5	96.0	10.0	.0	.7	.5
30	.0	-----	.5	.1	.2	154.0	2.2	152.0	8.4	.0	.6	.5
31	.0	-----	8.5	-----	.2	-----	2.7	159.0	-----	.1	-----	.5
MEAN	.06	.0	.38	.46	2.48	10.8	42.2	65.1	72.7	6.16	1.88	.39
INCHES	.005	.0	.03	.03	.18	.77	3.10	4.78	5.17	.45	.13	.03

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.002368. RUNOFF DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.

1962 SELECTED RUNOFF EVENT			VERO BEACH, FLORIDA				WATERSHED W-3 8.3				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches) <u>1/</u>	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 19 - October 2, 1962											
9-19	.00	<u>2/.0100</u>	9-19	2 RG	AVG <u>1/</u>		9-19	1200	9	.0000	
				1500	.00	.00		1600	16	.0546	
				1800	.12	.36		9-20	1600	56	.0559
				0400	.00	.36		2200	152	.1388	
				0600	.07	.50		9-21	0400	232	.1956
9-20			9-20	1600	.03	.80	9-21	0700	284	.2593	
				1800	.17	1.14		0930	326	.3346	
				2400	.10	1.74		1200	333	.4646	
				0400	.20	2.54		1600	284	.6017	
				0800	.05	2.74		2030	238	.6918	
9-21			9-21	1600	.00	2.74	9-22	2400	162	.9287	
				1800	.18	3.10		1200	142	.9962	
				2000	.10	3.30		1630	152	1.0760	
								2200	153	1.1663	
								9-23	0400	108	1.3466
9-22			9-22				9-24	1800	78	1.4568	
								0600	59	1.5379	
								1800	38	1.6528	
								9-25	1800	26	1.7286
								9-26	2400	28	1.7446
9-23			9-23				9-27	1800	18	1.7355	
								9-28	0600	15	1.8050
								1800	18	1.8246	
								9-29	0600	12	1.8423
								9-30	2400	8	1.8838
9-24			9-24				10-2	1200	<u>3/ 7</u>	1.9104	

Watershed conditions:

Approximate land use: (from SCS)

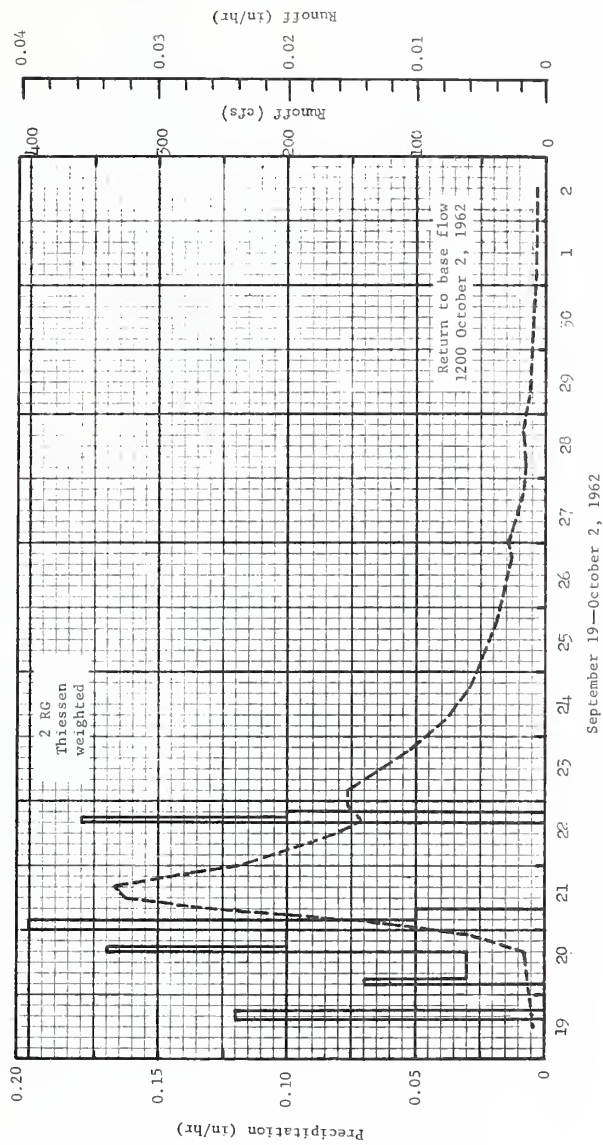
37% in improved pasture

53% in range and forest

10% in miscellaneous

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00009868. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 8.2-4. 1/ ALL PRECIPITATION THIESSEN WEIGHTED, USING 2 RAIN GAGES. 2/ RUNOFF PRIOR TO 1200, SEPT. 19, 1962. FOR ANTECEDENT P AND Q, SEE DAILY TABLES ON PRECEDING PAGE. 3/ RETURN TO NORMAL BASE FLOW.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00009868. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 8.2-4. 1/ ALL PRECIPITATION THIESSEN WEIGHTED, USING 2 RAIN GAGES. 2/ RUNOFF PRIOR TO 1200, SEPT. 19, 1962. FOR ANTECEDENT P AND Q, SEE DAILY TABLES ON PRECEDING PAGE. 3/ RETURN TO NORMAL BASE FLOW.



VERO BEACH, FLORIDA WATERSHED W-3

VERO BEACH, FLORIDA MONREVE RANCH CANAL, WATERSHED W-4

LOCATION: Martin County, Florida; 10 miles southwest of Stuart; subdrainage of St. Lucie Canal, Lake Okeechobee, and the Everglades.

AREA: 3,968 acres (6.20 sq. miles)

SLOPES: 100% of area in 0-2% class.

SOILS: Predominantly poorly drained sands, developed from unconsolidated marine deposits underlain and influenced by either acid or calcareous sediments.

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Pompano-Charlotte fine sand	35	2	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	48	Slow	Slow
Adamsville fine sand	28	4	Structureless fine single grain	Rapid	Structureless fine single grain	Rapid	36	Moderate	Medium
Immokalee fine sand	25	4	Structureless fine single grain	Rapid	Structureless (hardpan)	Moderate	36	Rapid	Medium
Felda-Manatee loamy fine sand	7	8	Weak fine granular	Moderate	Weak fine granular (massive when wet)	Slow	30	Slow	Slow
Sunniland-Bra- denton fine sand	5	4	Structureless fine single grain	Rapid	Weak subangular blocky	Moderate	36-84	Slow	Medium

EROSION: 100% of area in class 1. (No erosion)

LAND CAPABILITY:	Class	I	II	III	IV
	Percent of area	0	0	7	93

GEOLOGY: Pamlico sand of Pleistocene age extends to a depth of 60 feet or more. This is largely an unconsolidated mixture of quartz sand and shell fragments. A layer of consolidated sand one foot thick exists at a depth of approximately 20 feet. Source of data: Observations by USGS personnel during excavation of the St. Lucie Canal.

SURFACE DRAINAGE: This watershed is a diked area with water control system. Approximately half of area has good drainage through a system of canals and laterals, a principal waterway approximately 2.54 miles long, and a drainage density of 240 ft. per acre. Unimproved portion of area has poor surface drainage which occurs mainly by slow flow through interconnected ponds. Entire area drained by gravity through single outfall canal which has a stoplog control below irrigation access canal.

CHARACTER OF FLOW: Perennial stream, sustained by ground-water seepage from water table maintained by pumping.

INSTRUMENTATION: Runoff: Water-stage recorder and steel-plate control, operated by the U. S. Geological Survey. Precipitation: 5 Friez 9-inch capacity weighing recorders with 192-hour gears. Irrigation water: Stage recorder to determine pumping lift, rated propeller-type, low lift axial flow pump, and recorder for determining time of pump operation.

WATERSHED CONDITIONS: Approximately 30% of area improved permanent pasture and 70% native range. Good cover on entire area, height of grass 3 to 6 inches. Conditions essentially unchanged during period of record.

GENERALLY REPRESENTS: Ranch-size area of partially developed rangeland of low relief with gravity drainage and sub-irrigation in Southern Florida Flatwoods land resource area (U-155).

1/ MONTHLY PRECIPITATION AND RUNOFF (inches)						2/ VERO BEACH, FLORIDA WATERSHED W-4 8.4							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1959 P	2.99	.24	7.30	5.01	5.06	10.66	5.67	6.49	7.94	9.80	6.44	3.90	71.50
Q							2.86	1.66	2.71	5.36	3.65	1.96	---
1960 P	.11	3.74	.99	6.31	4.35	8.44	8.15	4.55	19.82	3.50	1.29	.42	61.67
Q	.68	1.34	.57	1.71	1.26	1.99	3.63	1.28	11.70	2.65	.19	.08	27.08
1961 P	4.04	.56	2.21	1.62	11.28	5.26	2.02	7.59	.95	3.84	1.47	.26	41.10
Q	.89	.25	.54	.41	2.32	1.73	.65	.91	.32	.14	.13	.15	8.44
1962 P	1.52	.79	4.52	5.60	3.01	5.69	8.98	11.27	9.02	.26	.68	.27	51.61
Q	.13	.07	.65	.83	.32	.10	1.89	5.17	4.48	.90	.20	.50	15.24
STA AVG (59-62) P	2.16	1.33	3.75	4.64	5.92	7.51	6.20	7.48	9.43	4.35	2.47	1.21	56.45
MEAN P 4/ 62 YR	.57	.55	.59	.98	1.30	1.27	2.26	2.25	4.80	2.26	1.04	.67	18.54
Q	2.35	2.35	3.04	3.40	4.28	5.87	5.52	5.67	7.87	7.34	2.76	2.01	52.46

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1960	9-23	.19	9-23	.19	9-23	.37	9-23	1.02	9-23	1.68	9-24	2.33	9-23	4.08	9-22	9.20
1961	5-26	.05	5-26	.05	5-26	.10	5-26	.25	5-26	.36	5-29	.44	5-29	.82	5-26	2.51
1962	8-19	.04	8-19	.04	8-19	.08	8-19	.21	8-19	.36	8-20	.55	8-19	1.05	8-17	3.12
MAXIMUMS FOR PERIOD OF RECORD																
19 60 to 19 62	9-23 1960	.19	9-23 1960	.19	9-23 1960	.37	9-23 1960	1.02	9-23 1960	1.68	9-24 1960	2.33	9-23 1960	4.08	9-22 1960	9.20

Notes: Quality of Records: P and Q, excellent. 1/ Thiessen weighted averages, using 5 rain gages. 2/ Includes artesian irrigation inflow during drought periods. 3/ P records began Jan. 1959; Q records (U. S. Geologic Survey) July 1959. Part-year amounts for 1959 included in runoff averages. 4/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Ft. Pierce, Fla. Monthly records for July 1933 and Feb. 1950 and 1951 were estimated from nearby station.

Cooperative Research Project of USDA, Florida Agricultural Experiment Station,
U. S. Geological Survey, and the Central and Southern Florida Flood Control District

1959 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA WATERSHED W-4 8.4						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.82	.56	.00	.00	.00	.00	.03	.00	.00	.00
2	.00	.00	.10	1.06	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.05	.00	.00	.07	.82	.86	.04	.00	.00
4	.00	.00	.00	.00	.00	.00	.17	1.22	.15	.00	.00	.00
5	.00	.00	.00	.00	.00	.22	.88	.00	.38	.00	.00	.00
6	.00	.07	.00	.00	.00	.53	.00	.00	.00	.02	.00	.00
7	.00	.00	.00	.00	.00	.53	1.06	.17	.00	.53	.00	.00
8	.00	.00	.14	.00	.00	.00	.00	.12	.00	.26	1.19	.00
9	.00	.00	.72	.00	.00	.00	.17	.21	.04	.00	.00	.00
10	.00	.03	.00	.00	.00	.00	.00	.37	.06	.00	.00	.00
11	.00	.00	.00	.00	.01	.00	.11	.07	.31	.19	.00	.00
12	.00	.00	.00	.00	.09	.00	.08	1.39	.89	.09	1.84	.00
13	.00	.08	.04	.00	.01	.00	.08	.00	.86	.00	.00	.00
14	.00	.00	.00	.00	.02	.14	.78	.01	.01	.00	.00	.00
15	.00	.00	.00	.00	.10	.09	.11	.70	.00	.00	.00	.00
16	.00	.00	.21	.00	.00	.26	1.04	.15	.53	.00	.00	.00
17	.20	.00	.66	.07	.48	1.67	.14	.00	.03	.18	.49	.00
18	.00	.09	.78	.00	.70	4.97	.00	.00	.00	2.57	.17	.00
19	.00	.00	.28	.00	.58	.80	.08	.00	.01	1.30	.28	.00
20	.00	.00	2.62	.24	.61	.01	.01	.32	1.25	3.92	.23	.00
21	.00	.00	.14	.94	.00	.90	.00	.02	.44	.05	1.64	.06
22	.00	.00	.14	2.11	.00	.01	.12	.00	1.16	.00	.26	.83
23	.18	.00	.00	.00	.00	.00	.44	.00	.27	.05	.00	.00
24	.10	.00	.22	.00	.00	.00	.19	.23	.27	.17	.00	1.20
25	.77	.00	.00	.00	.00	.00	.01	.09	.05	.45	.34	1.77
26	1.74	.00	.00	.00	.00	.00	.05	.00	.03	.00	.00	.01
27	.00	.00	.00	.00	.00	.00	.07	.00	.06	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.03	.00	.01	.00	.00	.00
29	.00	-----	.00	.00	2.16	.00	.00	.00	.19	.00	.00	.03
30	.00	-----	.00	.00	.00	.53	.00	.22	.00	.00	.00	.00
31	.00	-----	.43	-----	.00	-----	.00	.38	-----	.00	-----	.00
TOTAL	2.99	.24	7.30	5.01	5.06	10.66	5.67	6.49	7.94	9.80	6.44	3.90

NOTES: THIESSEN WEIGHTED RAINFALL, USING 5 RAIN GAGES.

1960 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA WATERSHED W-4 8.4						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.59	.00	.05	.00	.82	.65	.00	.97	.00
2	.00	.00	.00	.00	1.01	.37	.07	.00	.22	.00	.00	.00
3	.00	.00	.00	.00	.89	.19	.84	.00	.03	.00	.00	.01
4	.00	.21	.04	.00	.25	.21	.13	.00	2.28	.00	.00	.00
5	.00	1.16	.00	.78	.00	.27	.04	.03	.06	.00	.00	.00
6	.00	1.20	.00	.00	.00	.00	.79	.00	.18	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.30	.00	.80	.24	.00	.00
9	.00	.00	.00	.00	.00	.01	.00	.00	.01	.84	.00	.00
10	.00	.00	.00	.00	.00	.00	.04	.02	.96	.00	.00	.00
11	.00	.00	.00	.00	.00	.19	.00	.10	.79	.23	.00	.00
12	.00	.00	.11	.00	.00	.00	.00	.62	.00	.00	.00	.10
13	.00	.00	.00	.00	.00	.00	.10	.10	.00	.00	.28	.00
14	.00	.10	.00	.00	.00	.00	.28	.44	.00	.55	.00	.00
15	.00	.00	.00	.00	.00	.00	1.44	.91	.00	.98	.02	.00
16	.00	.00	.28	.00	.00	.11	.00	.08	.00	.00	.00	.31
17	.00	.00	.00	.00	.00	1.18	.10	.00	.00	.00	.00	.00
18	.00	.00	.11	.00	.00	.30	.40	.00	1.39	.15	.00	.00
19	.00	.00	.45	.74	.00	.50	1.29	.00	.00	.39	.00	.00
20	.00	.00	.00	.11	.00	2.35	.00	.02	.04	.00	.00	.00
21	.00	.00	.00	1.08	.00	.63	.00	.00	.10	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00
23	.00	.00	.00	.35	.00	.00	.00	.02	4.66	.12	.00	.00
24	.00	.00	.00	.23	.00	.88	.00	.23	5.01	.00	.00	.00
25	.00	.11	.00	1.75	.02	.56	.45	.06	.00	.00	.00	.00
26	.00	.31	.00	.46	.18	.00	1.23	.46	.96	.00	.02	.00
27	.00	.00	.00	.22	.07	.00	.23	.25	.00	.00	.00	.00
28	.00	.00	.00	.00	.10	.00	.03	.00	1.00	.00	.00	.00
29	.00	.00	.00	.00	.94	.05	.19	.05	.32	.00	.00	.00
30	.08	-----	.00	.00	.00	.59	.20	.34	.00	.00	.00	.00
31	.03	-----	.00	-----	.89	-----	.00	.00	-----	.00	-----	.00
TOTAL	.11	3.74	.99	6.31	4.55	8.44	8.15	4.55	19.82	3.50	1.29	4.42

NOTES: THIESSEN WEIGHTED RAINFALL, USING 5 RAIN GAGES.

1961 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA WATERSHED W-4						8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	1.17	.00	.00	.00	.00	.00	.05	.00	.00
2	.00	.00	.00	.00	.40	.00	.00	.00	.02	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00
4	.00	.56	.00	.00	.00	.00	.05	.00	.00	.00	.00	.10
5	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.40	.16
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	.17	.00
7	.00	.00	.00	.00	.00	.00	.01	.00	.04	.00	.00	.00
8	.00	.00	.00	.15	.00	.05	.09	.00	.19	.02	.00	.00
9	.45	.00	.00	.00	.01	.83	.00	.00	.00	.46	.00	.00
10	.27	.00	.00	.00	.41	.35	.00	.66	.00	.11	.00	.00
11	.00	.00	.00	.00	.00	.06	.11	.00	.00	.08	.00	.00
12	.09	.00	.00	.00	.00	.00	.00	.04	.00	.00	.11	.00
13	1.83	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	1.40	.00	2.18	.00	.00	.00	.00	.00	.00	.00	.01	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.19	.11	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	1.50	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.11	.06	.25	2.33	.00	.00
19	.00	.00	.03	.00	.00	.00	.88	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.47	.01	.00	.05	.00
21	.00	.00	.00	.00	.00	.00	.13	.25	.04	.00	.06	.00
22	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	1.27	.00	1.30	.00	.00	.49	.00
24	.00	.00	.00	.00	.00	.07	.00	.27	.00	.06	.00	.00
25	.00	.00	.00	.00	.13	.00	.00	.00	.00	.06	.00	.00
26	.00	.00	.00	.00	2.36	.00	.17	1.25	.00	.00	.00	.00
27	.00	.00	.00	.00	5.05	.28	.32	1.02	.00	.00	.00	.00
28	.00	.00	.00	.00	.05	1.22	.00	.02	.00	.12	.00	.00
29	.00	-----	.00	.00	1.06	.92	.00	.46	.10	.05	.00	.00
30	.00	-----	.00	.00	1.81	.21	.00	.10	.05	.00	.18	.00
31	.00	-----	.00	-----	.00	-----	.00	.00	-----	.00	-----	.00
TOTAL	4.04	.56	2.21	1.62	11.28	5.26	2.02	7.59	.95	3.84	1.17	.26

NOTES: THIESSEN WEIGHTED RAINFALL, USING 5 RAIN GAGES.

1962 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA WATERSHED W-4						8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.14	.00	.00	.00	.00	.49	.03	.10	.00	.01	.19	.00
2	.00	.00	.00	.66	1.05	.14	.09	.00	.00	.00	.00	.00
3	.00	.00	.33	.00	.00	.00	.00	.00	.03	.00	.00	.00
4	.00	.00	.00	.00	.46	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	1.07	.00	.00	.00	.00	.00	.00	.00
6	.74	.05	.00	.00	.31	.00	.00	.19	.35	.00	.00	.05
7	.00	.00	.00	3.13	.00	.00	.24	.07	.62	.00	.00	.00
8	.00	.00	.00	.22	.00	.00	.33	.00	.22	.00	.03	.00
9	.00	.00	.00	.00	.00	.00	.09	.11	.00	.02	.20	.00
10	.00	.74	.00	.00	.00	.21	.00	.32	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.81	.08	.00	.00	.00	.00
12	.10	.00	.00	.00	.00	.43	.00	.04	.57	.00	.00	.00
13	.00	.00	.00	.00	.00	.06	.05	.02	.01	.09	.00	.00
14	.00	.00	.00	.00	.00	.21	.03	1.57	2.13	.02	.00	.00
15	.05	.00	.00	.00	.00	.61	.12	1.65	.06	.00	.00	.00
16	.00	.00	.07	.00	.00	.09	.00	1.77	.00	.01	.00	.00
17	.00	.00	.00	.00	.00	.02	.00	1.03	.03	.03	.00	.00
18	.00	.00	.00	.00	.00	.00	.30	.26	.03	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	2.33	2.02	.40	.00	.00	.00
20	.00	.00	.00	.00	.00	.90	2.86	.04	1.48	.00	.00	.00
21	.00	.00	.00	.00	.00	1.09	1.04	.00	1.51	.00	.21	.00
22	.00	.00	.00	.00	.00	.03	.02	.96	.12	.03	.00	.00
23	.42	.00	.23	.00	.00	.52	.00	.00	.56	.00	.00	.00
24	.00	.00	.01	.00	.00	.00	.10	.02	.40	.00	.00	.22
25	.00	.00	2.70	.00	.00	.00	.00	.07	.00	.00	.00	.00
26	.00	.00	.93	1.29	.00	.00	.00	.09	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.38	.24	.00	.00	.00	.00
28	.07	.00	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00
29	.00	-----	.15	.00	.00	.11	.00	.05	.00	.00	.00	.00
30	.00	-----	.10	.00	.00	.48	.00	.33	.00	.00	.00	.00
31	.00	-----	.00	-----	.12	-----	.16	.21	-----	.00	-----	.00
TOTAL	1.52	.79	4.32	5.60	3.01	5.69	8.98	11.27	9.02	.26	.68	.27
STA AV	2.16	1.33	3.75	4.64	5.92	7.51	6.20	7.48	9.43	4.35	2.47	1.21

NOTES: THIESSEN WEIGHTED RAINFALL, USING 5 RAIN GAGES. STA AV IS BASED ON 1959-62 PERIOD.

1960 DAILY IRRIGATION (inches)						VERO BEACH, FLORIDA							WATERSHED W-4	8.4
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.06		
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12		
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06		
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06		
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12		
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12		
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
11	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00		
12	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00		
14	.00	.00	.13	.14	.00	.00	.00	.00	.00	.00	.00	.00		
15	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00		
16	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00		
17	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.03	.00		
18	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.12	.00		
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00		
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.06		
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.12		
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.12		
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
26	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
27	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00		
28	.14	.00	.14	.00	.00	.00	.00	.00	.00	.00	.12	.06		
29	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.12		
30	.00	-----	.14	.00	.00	.00	.00	.00	.00	.00	.00	.09		
31	.00	-----	.14	-----	.00	-----	.00	.00	-----	.00	-----	.00		
TOTAL	.32	.00	.69	1.08	.00	.00	.00	.00	.00	.00	.63	1.11		

NOTES: IRRIGATION COMPUTED FROM STAGE-LIFT CURVE AGAINST HOURS OF PUMP OPERATION. THIS 1960 DATA NOT INCLUDED IN STA AV ON NEXT PAGE.

1961 DAILY IRRIGATION (inches)						VERO BEACH, FLORIDA							WATERSHED W-4	8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12		
2	.06	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.12		
3	.12	.00	.12	.00	.00	.00	.00	.12	.00	.00	.00	.12		
4	.12	.00	.03	.00	.00	.00	.00	.00	.00	.04	.00	.12		
5	.06	.06	.00	.00	.00	.00	.00	.00	.00	.04	.00	.11		
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
7	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
8	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00		
9	.00	.03	.12	.00	.00	.00	.00	.00	.00	.00	.04	.00		
10	.00	.06	.06	.00	.00	.00	.00	.00	.00	.04	.04	.00		
11	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04		
13	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.12		
14	.00	.03	.00	.12	.00	.00	.00	.00	.00	.00	.00	.12		
15	.00	.12	.00	.12	.00	.00	.00	.00	.00	.00	.00	.12		
16	.00	.12	.00	.00	.00	.00	.00	.00	.00	.03	.06	.12		
17	.00	.06	.00	.03	.00	.00	.00	.00	.00	.04	.04	.12		
18	.12	.00	.00	.09	.00	.03	.00	.00	.00	.00	.00	.12		
19	.09	.00	.00	.12	.06	.00	.00	.00	.00	.00	.00	.12		
20	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.12		
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.12		
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.12		
23	.00	.00	.00	.09	.00	.00	.00	.00	.12	.00	.00	.12		
24	.03	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12		
25	.12	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12		
26	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.12		
27	.00	.06	.06	.00	.00	.00	.00	.00	.00	.00	.00	.12		
28	.00	.12	.12	.12	.00	.00	.00	.00	.00	.00	.00	.12		
29	.00	-----	.06	.00	.00	.00	.00	.00	.00	.00	.04	.12		
30	.00	-----	.00	.00	.00	.00	.00	.00	.00	.05	.12	.12		
31	.00	-----	.00	-----	.00	-----	.00	.00	-----	.00	-----	.12		
TOTAL	.75	.84	.69	.75	.06	.03	.00	.12	.33	.29	.44	2.91		

NOTES: IRRIGATION COMPUTED FROM STAGE-LIFT CURVE AGAINST HOURS OF PUMP OPERATION. THIS 1961 DATA INCLUDED IN STA AV ON NEXT PAGE.

1962 DAILY IRRIGATION (inches)						VERO BEACH, FLORIDA WATERSHED W-4							8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.12	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.08	
2	.04	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.05	
3	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
5	.00	.05	.00	.00	.00	.05	.00	.00	.00	.00	.00	.04	
6	.00	.12	.00	.00	.00	.01	.00	.00	.00	.00	.05	.05	
7	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.04	.09	
8	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
9	.04	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	
10	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	
12	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.12	
13	.08	.00	.07	.00	.00	.00	.00	.00	.00	.00	.05	.12	
14	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.12	
15	.04	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.12	
16	.04	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.12	
17	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
18	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
19	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
20	.12	.08	.12	.00	.00	.00	.00	.00	.00	.00	.00	.12	
21	.12	.12	.12	.00	.04	.00	.00	.00	.00	.00	.04	.12	
22	.12	.12	.12	.00	.07	.00	.00	.00	.00	.00	.09	.08	
23	.12	.12	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	
24	.04	.12	.12	.04	.00	.00	.00	.00	.00	.00	.00	.00	
25	.00	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	
26	.00	.12	.00	.00	.05	.00	.00	.00	.00	.08	.08	.00	
27	.00	.12	.00	.00	.00	.00	.00	.00	.00	.05	.12	.00	
28	.00	.12	.00	.00	.04	.00	.00	.00	.00	.00	.04	.00	
29	.00	-----	.00	.00	.02	.00	.00	.00	.00	.05	.00	.00	
30	.00	-----	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	
31	.00	-----	.00	-----	.00	-----	.00	.00	-----	.09	-----	.00	
TOTAL	1.15	1.61	1.43	.08	.22	.04	.00	.00	.00	.22	.56	1.71	
STA AV	.95	1.23	1.06	.12	.14	.03	.00	.06	.16	.26	.50	2.31	

NOTES: IRRIGATION COMPUTED FROM STAGE-LIFT CURVE AGAINST HOURS OF PUMP OPERATION. STA AV BASED ON 1961-62 PERIOD ONLY.

1959 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA WATERSHED W-4							8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1							15.0	3.7	3.0	6.4	18.0	2.3	
2							13.0	3.7	2.2	7.2	17.0	8.6	
3							11.0	16.0	2.2	7.2	15.0	9.6	
4							11.0	21.0	4.9	6.2	7.7	7.6	
5							16.0	12.0	6.9	5.7	3.1	6.6	
6							18.0	8.0	5.7	5.1	3.1	6.0	
7							24.0	8.0	4.4	7.2	3.6	5.1	
8							22.0	6.6	3.7	8.0	17.0	4.6	
9							20.0	6.4	3.1	6.6	27.0	4.2	
10							17.0	6.6	2.8	6.0	13.0	3.7	
11							16.0	12.0	4.7	6.2	3.8	3.7	
12							14.0	29.0	12.0	5.7	46.0	3.5	
13							17.0	16.0	26.0	4.9	31.0	3.1	
14							20.0	11.0	19.0	4.2	13.0	2.8	
15							22.0	10.0	12.0	3.5	6.7	2.6	
16							38.0	18.0	20.0	3.1	9.2	2.5	
17							27.0	13.0	17.0	6.8	21.0	2.3	
18							21.0	9.2	12.0	61.0	21.0	2.0	
19							18.0	7.2	10.0	66.0	24.0	1.9	
20							16.0	7.2	27.0	149.0	22.0	1.8	
21							13.0	6.2	34.0	115.0	58.0	2.7	
22							14.0	5.1	41.0	80.0	48.0	6.0	
23							14.0	4.9	41.0	61.0	37.0	5.4	
24							11.0	4.6	35.0	53.0	29.0	39.0	
25							10.0	4.4	27.0	48.0	30.0	52.0	
26							9.2	3.9	21.0	39.0	24.0	42.0	
27							8.0	3.3	17.0	27.0	20.0	31.0	
28							6.9	2.6	15.0	27.0	19.0	26.0	
29							5.4	2.3	14.0	25.0	15.0	15.0	
30							4.9	2.6	8.1	22.0	6.4	11.0	
31							4.2	3.5	-----	20.0	-----	12.0	
MEAN							15.4	8.94	15.1	28.8	20.3	10.5	
INCHES							2.86	1.66	2.71	5.36	3.65	1.96	

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .005998. RUNOFF DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.

1960 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA							8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	10.0	1.9	3.5	2.3	12.0	10.0	12.0	27.0	6.0	43.0	7.8	.2	
2	9.6	1.9	3.0	12.0	20.0	6.9	17.0	10.0	6.2	33.0	5.4	.3	
3	8.8	2.6	2.8	5.4	30.0	4.6	26.0	14.0	15.0	27.0	.9	.5	
4	6.0	9.1	2.5	3.1	28.0	4.2	18.0	9.6	20.0	18.0	1.6	.4	
5	7.2	39.0	2.2	6.2	20.0	4.7	18.0	7.6	24.0	15.0	2.0	.4	
6	6.6	30.0	2.0	4.9	15.0	3.5	22.0	6.2	26.0	12.0	1.8	.3	
7	6.5	23.0	1.9	2.8	9.6	2.3	17.0	5.4	17.0	10.0	1.4	.3	
8	4.4	11.0	1.9	5.1	9.2	1.7	16.0	4.9	25.0	9.2	1.1	.3	
9	4.4	5.7	2.2	2.2	4.3	1.3	15.0	3.4	13.0	13.0	1.0	.3	
10	3.9	6.2	3.5	1.8	2.2	1.2	13.0	2.2	32.0	17.0	.8	.2	
11	3.3	5.7	3.7	1.4	3.4	.8	10.0	3.7	32.0	14.0	.7	.2	
12	2.3	4.9	3.0	1.4	3.7	.7	9.2	4.2	30.0	10.0	.6	.2	
13	2.6	5.4	2.3	2.5	3.3	2.0	8.8	3.5	24.0	10.0	.6	.2	
14	2.5	5.7	2.3	3.0	2.6	3.0	15.0	12.0	10.0	23.0	.6	.2	
15	2.2	5.1	2.8	2.8	2.0	1.8	31.0	16.0	14.0	32.0	.6	.2	
16	2.0	4.4	14.0	2.6	1.8	4.5	20.0	10.0	7.8	23.0	.6	.2	
17	1.9	4.2	6.0	2.5	1.7	3.5	20.0	7.2	11.0	10.0	.5	.2	
18	1.8	3.7	5.5	2.2	1.6	3.0	34.0	6.0	24.0	16.0	.5	.2	
19	1.7	3.1	5.4	9.9	1.5	7.3	41.0	4.9	20.0	18.0	.5	.2	
20	1.6	2.8	3.0	22.0	1.4	34.0	27.0	3.1	16.0	15.0	.4	.2	
21	1.5	2.8	1.6	20.0	1.3	29.0	20.0	2.8	15.0	12.0	.4	.2	
22	1.4	2.6	1.3	5.5	1.4	23.0	15.0	3.0	90.0	9.6	.3	.2	
23	1.4	9.9	1.0	6.9	2.0	32.0	11.0	2.5	283.0	8.8	.3	.3	
24	1.3	4.9	1.0	8.0	3.0	5.0	8.8	2.5	378.0	6.3	.3	.8	
25	1.3	4.9	.9	42.0	3.1	30.0	16.0	5.3	226.0	5.5	.3	1.0	
26	1.8	6.2	1.5	37.0	3.3	23.0	32.0	6.8	194.0	5.4	.3	1.0	
27	2.6	6.0	3.8	27.0	3.5	17.0	28.0	4.9	139.0	4.9	.2	.8	
28	3.1	4.6	2.0	19.0	3.7	13.0	22.0	3.5	101.0	3.9	.2	.7	
29	2.8	3.9	2.0	14.0	3.3	13.0	21.0	2.8	75.0	2.9	.2	1.0	
30	2.0	-----	2.3	9.3	3.0	17.0	19.0	5.5	56.0	.9	.2	1.3	
31	2.8	-----	2.2	-----	9.0	-----	20.0	4.6	-----	.9	-----	1.5	
MEAN	3.65	7.73	3.04	9.49	6.77	11.10	19.50	6.91	65.0	14.3	1.07	.45	
INCHES	.68	1.34	.57	1.71	1.26	1.99	3.63	1.28	11.70	2.65	.19	.08	
NOTES: TO CONVERT DISCHARGE IN GFS TO IN/DAY, MULTIPLY BY .005998. RUNOFF DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.													
1961 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA							8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	1.0	.6	2.3	24.0	.8	30.0	15.0	.5	5.1	1.0	.8	.9	
2	.8	.8	2.8	8.8	.7	22.0	11.0	.4	4.2	.9	.7	.9	
3	1.0	1.9	3.3	4.1	.7	17.0	7.6	1.0	3.7	.7	.6	1.0	
4	1.7	1.1	2.5	2.5	.6	14.0	6.6	1.0	3.1	.6	.6	1.1	
5	2.6	1.3	2.0	1.7	.6	8.1	5.1	.6	2.6	.8	.6	1.1	
6	2.6	1.2	2.0	1.3	.5	7.2	4.2	.5	2.3	1.0	.6	1.1	
7	2.8	.9	1.8	1.1	.4	6.2	3.9	.5	2.0	.8	.6	.9	
8	2.8	.8	1.7	1.0	.4	6.8	3.7	.5	1.9	.6	.5	.8	
9	2.2	.6	2.1	.8	1.1	15.0	3.7	.6	1.7	.6	.5	.7	
10	1.5	.6	2.8	.7	1.6	15.0	3.9	.8	1.5	.6	1.0	.7	
11	1.3	.6	2.2	.6	1.5	11.0	3.1	6.3	1.0	.6	.9	.6	
12	21.0	.6	2.8	.5	1.4	8.4	2.6	6.2	.6	.6	.8	.6	
13	40.0	.6	4.0	.4	1.3	6.6	2.0	2.5	.5	.5	.7	.6	
14	30.0	.5	27.0	1.4	1.3	5.4	1.7	1.5	.6	.5	.6	.8	
15	15.0	.6	7.7	2.9	1.0	4.6	1.3	6.2	3.2	.5	.5	.9	
16	5.9	1.8	3.9	1.6	.8	4.2	1.0	12.0	1.6	.4	.5	.8	
17	1.3	3.4	2.6	1.0	.7	2.5	1.2	4.9	.9	.9	.9	.8	
18	1.5	3.5	1.8	1.4	.6	1.8	3.0	2.5	.7	1.7	1.0	.8	
19	1.8	3.3	1.4	1.6	.6	1.9	4.6	2.0	.6	1.4	.8	.8	
20	1.7	3.1	1.1	1.5	.6	1.5	4.2	2.2	3.4	1.1	.8	.8	
21	1.5	2.2	1.0	1.2	.5	1.0	3.7	2.0	1.2	.9	.7	.8	
22	1.3	1.8	.8	1.1	.5	1.6	3.1	3.3	.7	.8	1.0	.8	
23	1.1	1.7	.6	1.2	1.2	6.5	2.6	5.4	2.8	.7	1.2	.8	
24	1.0	1.2	.6	1.2	1.8	4.4	2.2	4.4	.8	.7	1.0	.8	
25	1.0	1.6	.5	1.0	2.5	3.3	1.8	7.6	.7	.7	.8	.8	
26	1.0	1.4	.5	.8	62.0	3.1	1.4	16.0	1.8	.7	.8	.8	
27	.9	1.4	.5	.7	73.0	6.5	1.0	17.0	1.9	.6	.7	.8	
28	.8	2.2	1.6	1.0	41.0	21.0	.8	14.0	1.3	.6	.6	.8	
29	.7	-----	2.3	1.0	74.0	30.0	1.0	15.0	.9	.6	.6	.8	
30	.7	-----	2.3	1.0	64.0	22.0	.7	8.8	.7	.6	1.0	.8	
31	.6	-----	2.3	-----	46.0	-----	.6	6.2	-----	.6	-----	.8	
MEAN	4.81	1.48	2.93	2.30	12.5	9.62	3.49	4.92	1.80	.75	.75	.82	
INCHES	.89	.25	.54	.41	2.32	1.73	.65	.91	.32	.14	.13	.15	
NOTES: TO CONVERT DISCHARGE IN GFS TO IN/DAY, MULTIPLY BY .005998. RUNOFF DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.													

1962 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA WATERSHED W-4 8.4						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.1	.5	.4	.9	.6	.3	.6	11.0	18.0	19.0	.9	1.2
2	1.2	.4	.5	1.9	2.5	.3	.6	9.6	15.0	17.0	.8	3.7
3	.8	.4	.6	2.3	2.2	.2	.6	8.8	13.0	14.0	.7	2.8
4	.7	.4	.5	1.7	3.7	.2	.6	8.0	12.0	12.0	.7	1.4
5	.6	.4	.4	1.4	13.0	.2	.5	7.2	10.0	10.0	.6	1.5
6	.6	.5	.4	1.0	12.0	.2	.4	6.6	9.6	8.8	.6	2.5
7	.6	.6	.4	26.0	6.0	.2	3.3	6.2	10.0	7.6	.9	3.1
8	.5	.6	.3	39.0	2.6	.2	1.6	5.7	14.0	6.9	.8	2.8
9	.5	.6	.3	18.0	1.7	.2	.7	5.1	12.0	6.0	.9	2.8
10	.6	.7	.3	5.7	1.4	.2	.5	4.9	10.0	4.6	.7	4.2
11	.6	.6	.3	4.2	1.0	.2	.5	4.9	8.8	3.9	.7	4.4
12	.6	.5	.2	3.5	.8	.2	.5	4.6	8.4	2.6	.7	4.4
13	.6	.4	.2	3.0	.6	.2	.5	3.9	9.2	2.5	1.2	4.4
14	.7	.4	.3	2.6	.4	.2	.5	6.4	34.0	1.6	.9	4.4
15	.6	.4	.4	2.2	.3	.2	.5	23.0	39.0	1.5	.7	4.2
16	.6	.4	.4	1.8	.3	.2	.5	44.0	25.0	1.7	.7	3.7
17	.6	.4	.4	1.5	.3	.2	.5	69.0	18.0	1.6	.7	3.9
18	.6	.4	.3	1.4	.2	.2	.5	64.0	15.0	1.6	.6	4.2
19	.7	.3	.3	1.1	.2	.2	6.9	83.0	13.0	1.4	.6	3.9
20	.7	.3	.4	.9	.2	.2	23.0	92.0	25.0	1.2	.6	3.9
21	.7	.4	.4	.8	.2	.2	52.0	57.0	87.0	1.1	.7	3.9
22	.8	.4	.4	.6	.9	.3	46.0	56.0	63.0	1.0	2.8	3.1
23	.8	.4	1.0	.5	.7	2.8	32.0	57.0	47.0	1.0	1.2	1.4
24	.9	.4	2.3	.4	.4	3.1	26.0	44.0	49.0	.9	3.3	1.2
25	.8	.4	39.0	.4	.3	1.8	22.0	36.0	43.0	.8	1.1	1.0
26	.7	.4	38.0	5.4	.3	1.2	19.0	31.0	35.0	1.2	.8	1.0
27	.7	.4	14.0	5.1	.3	.9	18.0	27.0	29.0	7.7	2.5	1.0
28	.7	.4	2.3	3.1	.3	.7	17.0	25.0	26.0	5.7	3.0	.9
29	.6	-----	1.2	1.8	.3	.6	14.0	21.0	27.0	2.5	1.4	.9
30	.6	-----	1.4	1.0	.3	.5	13.0	19.0	22.0	2.0	1.2	.9
31	.5	-----	1.2	-----	.2	-----	13.0	21.0	-----	1.2	-----	.8
MEAN	.69	.44	3.50	4.64	1.74	.54	10.2	27.8	24.9	4.86	1.10	2.69
INCHES	.13	.07	.65	.83	.32	.10	1.89	5.17	4.48	.90	.20	.50

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .005998. RUNOFF DATA FURNISHED BY U. S. GEOLOGICAL SURVEY.

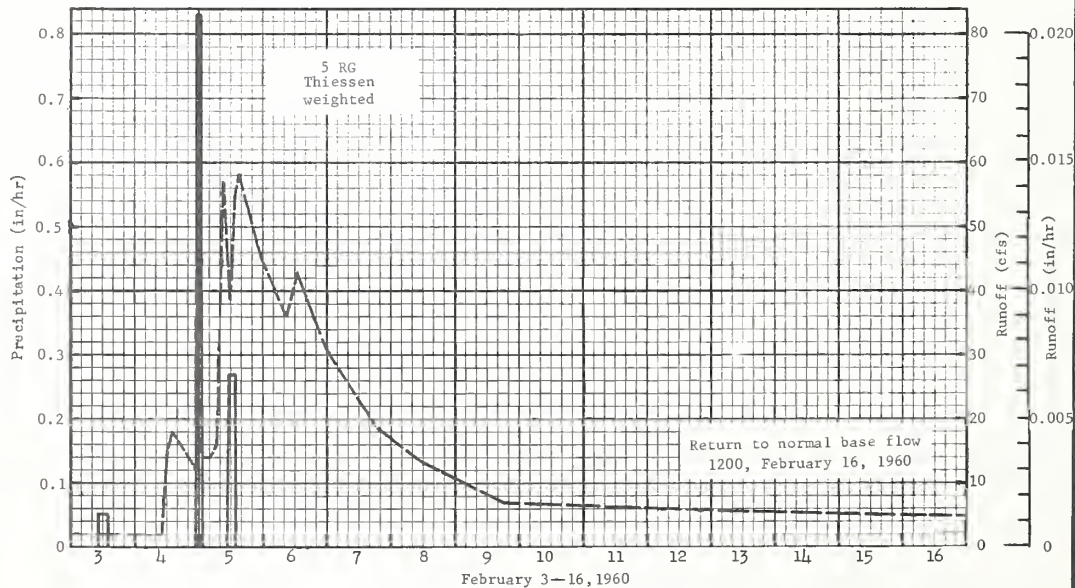
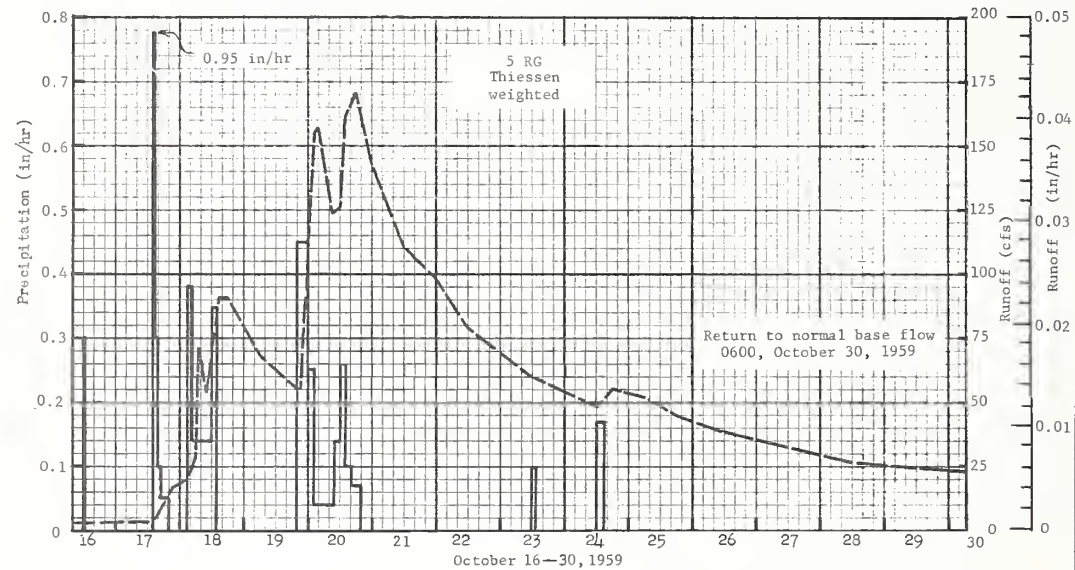
1959 SELECTED RUNOFF EVENT						VERO BEACH, FLORIDA						WATERSHED W-4		8.4	
ANTECEDENT CONDITIONS 1/			RAINFALL				RUNOFF								
DATE MO-DAY	RAINFALL (inches) 2/	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)					
Event of October 16-30, 1959															
10-16	.00	3/.0190	10-16	5 RG	AVG 2/		10-16	2400	3	.0000					
				1200	.00	.00		1400	3	.0105					
10-17			10-17	1230	.30	.15	10-17	2100	17	.0280					
				1400	.00	.15		0300	20	.0557					
10-18			10-18	1500	.95	1.10	10-18	0600	28	.0737					
				1600	.30	1.40									
10-19			10-19	1700	.10	1.50	10-19	0700	71	.0861					
				2000	.05	1.65		1000	54	.1330					
10-20			10-20	0300	.00	1.65	10-20	1500	91	.2236					
				0500	.38	2.41		1800	91	.2916					
10-21			10-21	1200	.14	3.39	10-21	0600	68	.5302					
10-22			10-22	1400	.35	4.09	10-22	2100	55	.7608					
				2000	.00	4.09		0230	155	.9051					
10-23			10-23	2400	.15	5.89	10-23	0400	157	.9636					
				0200	.25	6.39		0900	124	1.1422					
10-24			10-24	1000	.04	6.71	10-24	1200	126	1.2360					
10-25			10-25	1200	.14	6.99	10-25	1400	161	1.3076					
				1400	.26	7.51		1800	170	1.4731					
10-26			10-26	1600	.10	7.71	10-26	2400	143	1.7078					
				2000	.07	7.99		1200	111	2.0887					
10-27			10-27	1200	.00	7.99	10-27	2400	98	2.4019					
10-28			10-28	1330	.10	8.14	10-28	1200	79	2.6674					
				1200	.00	8.14		1200	60	3.0843					
10-29			10-29	1500	.17	8.65	10-29	1200	49	3.4111					
								1800	55	3.4891					
10-30			10-30				10-30	0600	52	3.6495					
								1800	45	3.7950					
								1200	39	4.2021					
								1200	27	4.5982					
								0600	4/ 23	4.8607					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0002499. 1/ FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY PRECIPITATION TABLE ON P. 8.4-2 AND DAILY DISCHARGE TABLE ON P. 8.4-5. 2/ ALL PRECIPITATION THIESSEN WEIGHTED, USING RAIN GAGES 1, 2, 3, 4, and 5. 3/ RUNOFF PRIOR TO 2400, OCT. 16, 1959. 4/ NORMAL BASE FLOW.

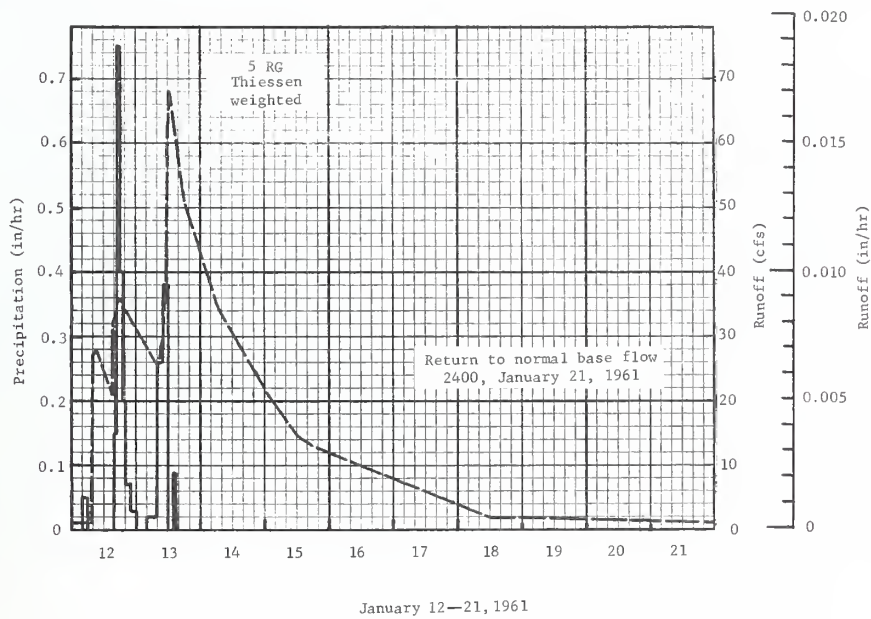
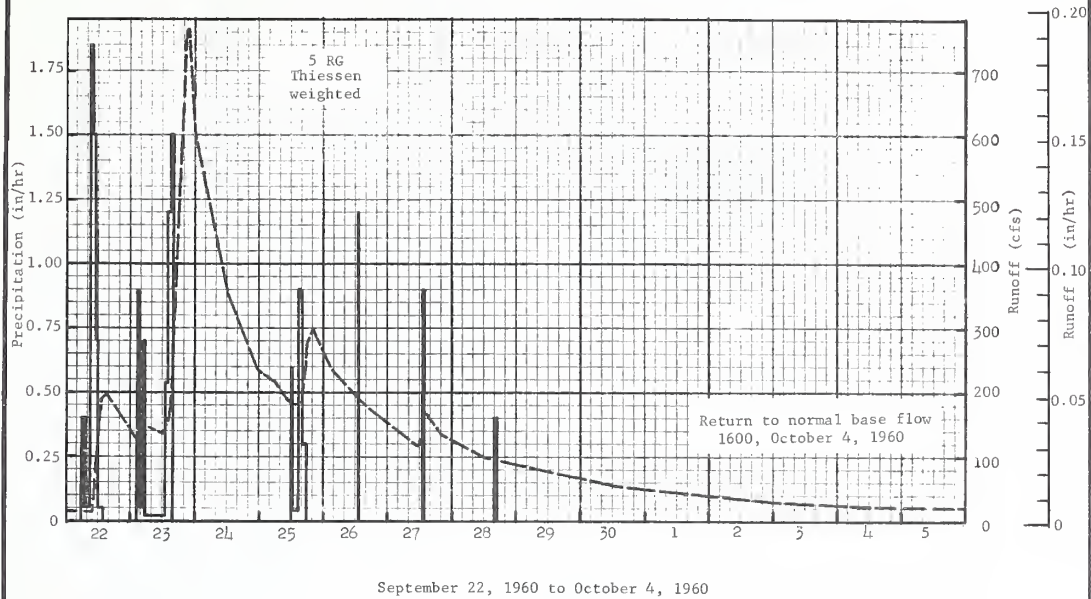
1960, 1961 SELECTED RUNOFF EVENTS			VERO BEACH, FLORIDA				WATERSHED W-4				8.4
ANTECEDENT CONDITIONS 1/			RAINFALL				RUNOFF				
DATE MD-DAY	RAINFALL (inches) 2/	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of February 3-16, 1960											
2-3	.00	3/.0160	2-3	5 RG	AVG 2/		2-3	2400	2	.0000	
				1000	.00	.00		1000	2	.0050	
				1400	.05	.20		1200	15	.0092	
				2300	.00	.20		1400	18	.0175	
				0100	.83	1.86		1400	18	.0175	
				1100	.00	1.86		2330	12	.0531	
				1400	.27	2.67		2400	17	.0549	
								0200	14	.0626	
								0400	14	.0697	
								0630	16	.0790	
						0900		57	.1018		
						1130	39	.1318			
						1330	55	.1553			
						1500	58	.1765			
						2400	45	.2923			
						0900	36	.3854			
							1300	43	.4229		
							2400	31	.5246		
							1800	19	.6372		
							0900	14	.6989		
							2-9	1800	7	.8267	
							2-12	2400	6	.9530	
							2-16	1200	4/ 5	1.0681	
Event of September 22-October 4, 1960											
9-22	.00	5/.0030	9-22	5 RG	AVG 2/		9-22	0100	15	.0000	
				0600	.00	.00		1000	15	.0337	
				0700	.40	.40		1330	190	.1234	
				0900	.05	.50		1500	199	.1963	
				1000	1.85	2.35		0300	126	.6836	
				1100	1.50	3.85					
				1200	.70	4.55		0700	144	.8185	
				1400	.05	4.65		1300	136	1.0284	
				0300	.00	4.65		1500	170	1.1049	
				0330	.80	5.05		2000	703	1.6503	
				.05	5.10	2100		765	1.8338		
						2400	604	2.3469			
						1200	357	3.7878			
						2400	237	4.6785			
						9-25	0600	219	5.0204		
						1200	180	5.3195			
							1600	184	5.5014		
							1800	277	5.6166		
							2000	300	5.7608		
							9-26	0500	240	6.2341	
							1600	180	6.9463		
							1200	118	7.6610		
							1400	170	7.7330		
							2000	137	7.9632		
							9-28	1200	100	8.4370	
							9-30	1200	55	9.3666	
							10-2	2400	30	10.0039	
							10-4	1600	4/ 21	10.2586	
Event of January 12-21, 1961											
1-12	.00	6/.0004	1-12	5 RG	AVG 2/		1-12	0100	1	.0000	
				0400	.00	.00		0700	1	.0015	
				0600	.05	.10		0800	27	.0050	
				1600	.00	.10		0930	28	.0153	
				1700	.15	.25		1500	21	.0490	
				1800	.75	1.00					
				1900	.40	1.40		1530	31	.0522	
				2000	.20	1.60		1730	36	.0690	
				2200	.07	1.74		0830	25	.1833	
				2400	.03	1.80		1130	39	.2073	
				.00	1.80	1230		68	.2207		
Event of February 3-16, 1960											
2-3	.00	3/.0160	2-3	5 RG	AVG 2/		2-3	2400	2	.0000	
				1000	.00	.00		1000	2	.0050	
				1400	.05	.20		1200	15	.0092	
				2300	.00	.20		1400	18	.0175	
				0100	.83	1.86		1400	18	.0175	
				1100	.00	1.86		2330	12	.0531	
				1400	.27	2.67		2400	17	.0549	
								0200	14	.0626	
								0400	14	.0697	
								0630	16	.0790	
						0900		57	.1018		
						1130	39	.1318			
						1330	55	.1553			
						1500	58	.1765			
						2400	45	.2923			
						0900	36	.3854			
							1300	43	.4229		
							2400	31	.5246		
							1800	19	.6372		
							0900	14	.6989		
							2-9	1800	7	.8267	
							2-12	2400	6	.9530	
							2-16	1200	4/ 5	1.0681	
Event of September 22-October 4, 1960											
9-22	.00	5/.0030	9-22	5 RG	AVG 2/		9-22	0100	15	.0000	
				0600	.00	.00		1000	15	.0337	
				0700	.40	.40		1330	190	.1234	
				0900	.05	.50		1500	199	.1963	
				1000	1.85	2.35		0300	126	.6836	
				1100	1.50	3.85					
				1200	.70	4.55		0700	144	.8185	
				1400	.05	4.65		1300	136	1.0284	
				0300	.00	4.65		1500	170	1.1049	
				0330	.80	5.05		2000	703	1.6503	
				.05	5.10	2100		765	1.8338		
						2400	604	2.3469			
						1200	357	3.7878			
						2400	237	4.6785			
						9-25	0600	219	5.0204		
						1200	180	5.3195			
							1600	184	5.5014		
							1800	277	5.6166		
							2000	300	5.7608		
							9-26	0500	240	6.2341	
							1600	180	6.9463		
							1200	118	7.6610		
							1400	170	7.7330		
							2000	137	7.9632		
							9-28	1200	100	8.4370	
							9-30	1200	55	9.3666	
							10-2	2400	30	10.0039	
							10-4	1600	4/ 21	10.2586	
Event of January 12-21, 1961											
1-12	.00	6/.0004	1-12	5 RG	AVG 2/		1-12	0100	1	.0000	
				0400	.00	.00		0700	1	.0015	
				0600	.05	.10		0800	27	.0050	
				1600	.00	.10		0930	28	.0153	
				1700	.15	.25		1500	21	.0490	
				1800	.75	1.00					
				1900	.40	1.40		1530	31	.0522	
				2000	.20	1.60		1730	36	.0690	
				2200	.07	1.74		0830	25	.1833	
				2400	.03	1.80		1130	39	.2073	
				.00	1.80	1230		68	.2207		
Event of February 3-16, 1960											
2-3	.00	3/.0160	2-3	5 RG	AVG 2/		2-3	2400	2	.0000	
				1000	.00	.00		1000	2	.0050	
				1400	.05	.20		1200	15	.0092	
				2300	.00	.20		1400	18	.0175	
				0100	.83	1.86		1400	18	.0175	
				1100	.00	1.86		2330	12	.0531	
				1400	.27	2.67		2400	17	.0549	
								0200	14	.0626	
								0400	14	.0697	
								0630	16	.0790	
						0900		57	.1018		
						1130	39	.1318			
						1330	55	.1553			
						1500	58	.1765			
						2400	45	.2923			
						0900	36	.3854			
							1300	43	.4229		
							2400	31	.5246		
							1800	19	.6372		
							0900	14	.6989		
							2-9	1800	7	.8267	
							2-12	2400	6	.9530	
							2-16	1200	4/ 5	1.0681	
Event of September 22-October 4, 1960											
9-22	.00	5/.0030	9-22	5 RG	AVG 2/		9-22	0100	15	.0000	
				0600	.00	.00		1000	15	.0337	
				0700	.40	.40		1330	190	.1234	
				0900	.05	.50		1500	199	.1963	
				1000	1.85	2.35		0300	126	.6836	
				1100	1.50	3.85					
				1200	.70	4.55		0700	144	.8185	
				1400	.05	4.65		1300	136	1.0284	
				0300	.00	4.65		1500	170	1.1049	
				0330	.80	5.05		2000	703	1.6503	
				.05	5.10	2100		765	1.8338		
						2400	604	2.3469			
						1200	357	3.7878			
						2400	237	4.6785			
						9-25	0600	219	5.0204		
						1200	180	5.3195			
							1600	184	5.5014		
							1800	277	5.6166		
							2000	300	5.7608		
							9-26	0500	240	6.2341	
							1600	180	6.9463		
							1200	118	7.6610		
							1400	170	7.7330		
							2000	137	7.9632		
							9-28	1200	100	8.4370	
							9-30	1200	55	9.3666	
							10-2	2400	30	10.0039	
							10-4	1600	4/ 21	10.2586	
Event of January 12-21, 1961											
1-12	.00	6/.0004	1-12	5 RG	AVG 2/		1-12	0100	1	.0000	

1961 SELECTED RUNOFF EVENT			VERO BEACH, FLORIDA				WATERSHED W-4			8.4
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of January 12-21, 1961--Continued										
1-13				5 RG	AVG 1/		1-13	1800	51	.3024
				0800	.02	1.88	1-14	0600	35	.4514
				1000	.26	2.14		2100	22	.5596
				1200	.38	3.16	1-15	1200	15	.6151
				1400	.00	3.16		1800	13	.6360
				1500	.09	3.25				
							1-16	1200	10	.6878
							1-18	1200	2	.7597
							1-21	2100	2/ 1	.7912

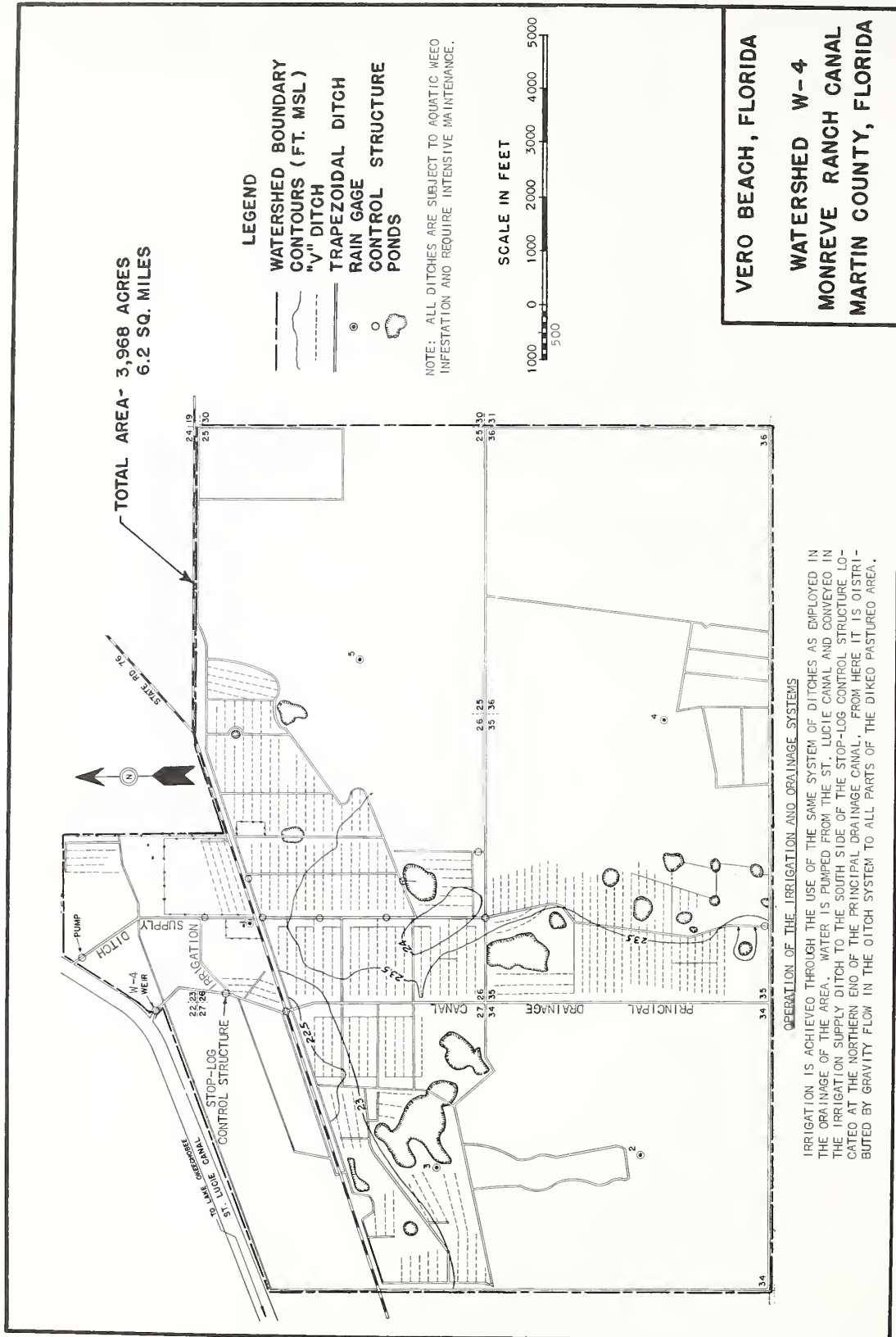
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0002499. 1/ PRECIPITATION THIESSEN WEIGHTED, USING RAIN GAGES 1, 2, 3, 4, AND 5. 2/ NORMAL BASE FLOW.



VERO BEACH, FLORIDA WATERSHED W-4



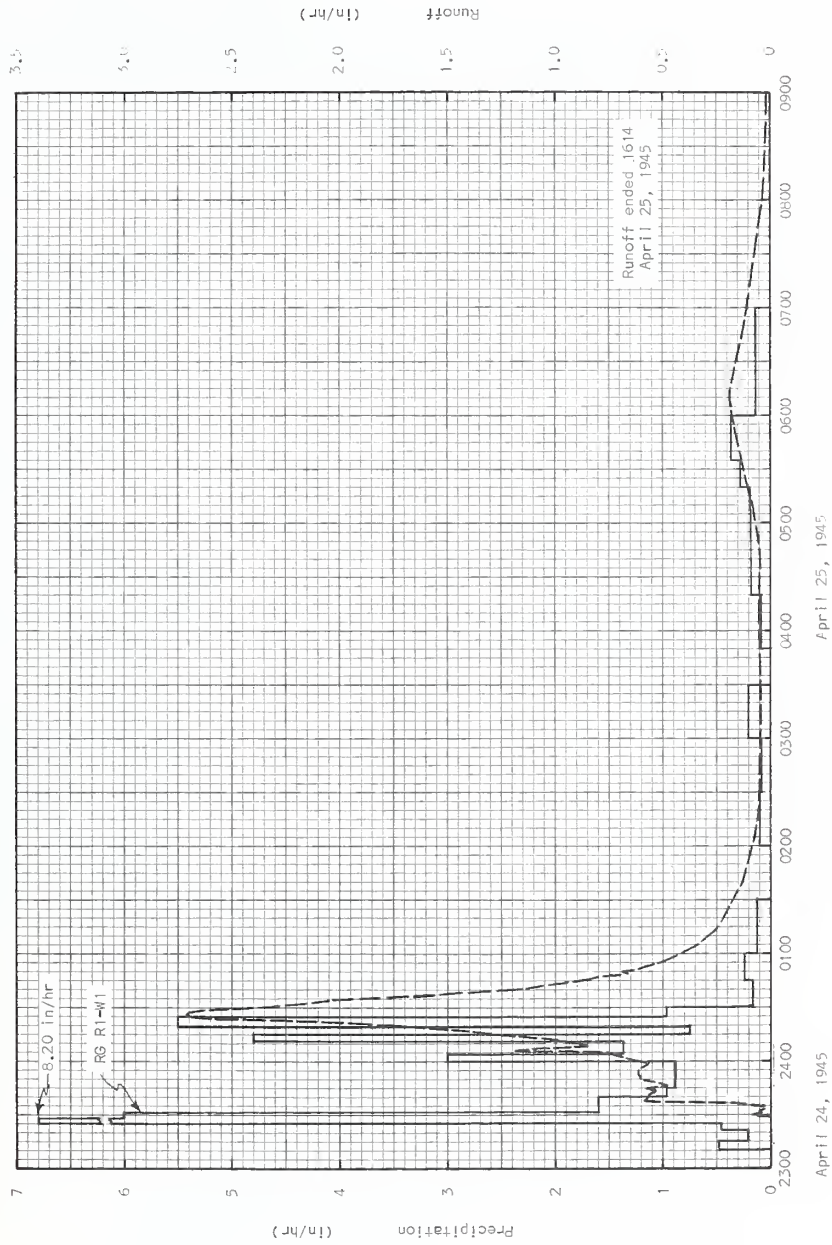
VERO BEACH, FLORIDA WATERSHED W-4



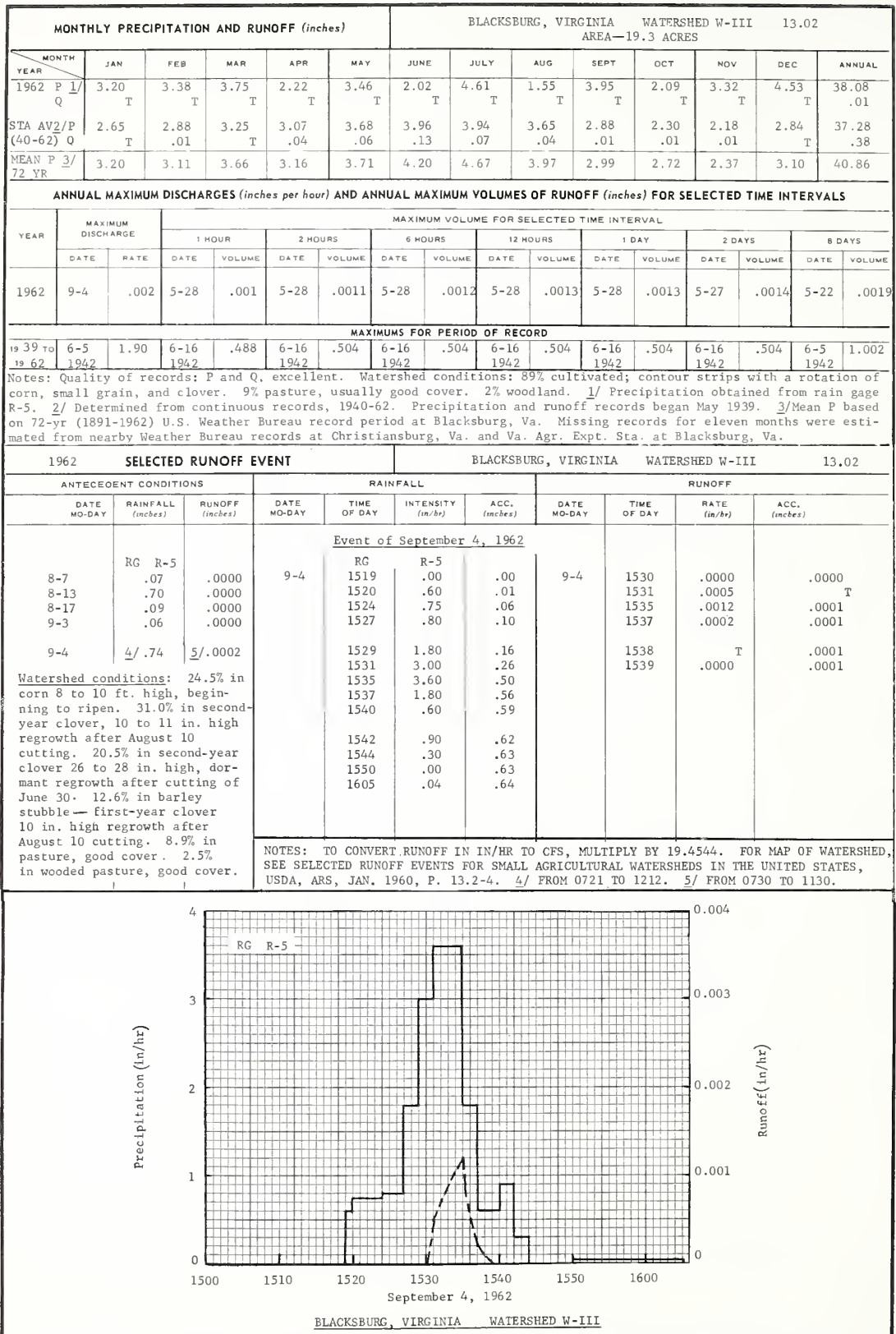
MONTHLY PRECIPITATION AND RUNOFF (inches)						WATKINSVILLE, GEORGIA										
						AREA — 19.2 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ¹ / Q	5.44 .15	4.88 1.09	5.94 .35	5.68 .19	1.41 .00	5.89 .01	2.08 T	3.47 .02	5.84 .04	2.10 T	4.80 .08	2.57 T	50.10 1.93		
STA AV ² / (39-62) Q	P	4.55 .49	4.64 .43	5.76 .52	4.06 .39	3.43 .28	3.23 .09	4.58 .29	3.78 .42	2.94 .02	2.44 .06	3.28 .35	4.36 .24	47.05 3.59		
MEAN P ³ / 78 YR		4.67	4.91	5.19	3.84	3.62	3.99	5.09	4.39	3.36	2.95	2.83	4.39	49.23		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-22	.14	2-22	.20	2-22	.34	2-22	.45	2-22	.53	2-21	.62	2-21	.63	2-21	1.09
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	4-25 1945	<u>2.71</u>	1-6 1946	1.56	1-6 1946	1.94	1-6 1946	2.20	1-6 1946	2.94	11-28 1948	<u>3.03</u>	11-26 1948	<u>5.68</u>	11-22 1948	<u>6.64</u>
NOTES: Quality of records: P, excellent; Q, good, due to minor recording problems from livestock traffic near stilling well. Watershed conditions: Excellent Coastal Bermudagrass pasture; heavily grazed by beef cattle May to Oct. (9200 cow-days); moderately grazed Nov. and Dec. when overseeded in wheat and barley (400 cow-days); fertilized with 1000 lb/ac 6-12-12 and 160 lb. N in April and May. 1/Precipitation from RG R-1-W1. 2/P and Q measurements began Sept. 1, 1939. 3/Mean P based on 78-yr (1885-1962) U.S. Weather Bureau record period at Athens, Ga. 4/Maximum discharge for 4-25-45 and volumes and dates for 1, 2, and 8 days are revised and supersede those previously published (underlined items).																
GENERALLY REPRESENTS: (Revision) Southern part of Piedmont Plateau problem area (B10) redesignated southern part of Southern Piedmont land resource area (P-136).																
1945 SELECTED RUNOFF EVENT						WATKINSVILLE, GEORGIA										
ANTECEDENT CONDITIONS						RAINFALL				RUNOFF 5/						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of April 24-25, 1945 6/																
RG R1-W1			4-24	RG	R1-W1		4-24	2329	.0000	.0000						
3-26	1.01	.0000		2310	.00	.00		2330	.0819	.0007						
4-2	.72	.0000		2315	.48	.04		2331	.0350	.0017						
4-16	.16	.0000		2321	.20	.06		2332	.0534	.0024						
4-17	1.74	.0000		2325	.45	.09		2333	.0260	.0030						
4-22	.64	.0000		2328	8.20	.50		2334	.0362	.0035						
4-23	.91	.0003		2331	6.00	.80		2336	.1432	.0062						
				2340	1.60	1.04		2337	.3453	.0103						
				2345	.96	1.12		2338	.5871	.0181						
				2400	.88	1.34		2339	.5695	.0277						
Watershed conditions: Vegetated bench terraces with 1-year old kudzu growing in 10-foot rows between them; poor cover of young weeds and grass between rows.			4-25	0004	3.00	1.54		2341	.5644	.0466						
				0011	1.37	1.70		2343	.5356	.0649						
				0015	4.80	2.02		2344	.5768	.0742						
				0019	.75	2.07		2345	.5068	.0832						
				0025	5.50	2.62		2346	.4787	.0914						
				0030	.96	2.70		2348	.5391	.1083						
				0045	.16	2.74		2349	.5897	.1177						
				0100	.24	2.80		2350	.6037	.1276						
				0130	.12	2.86		2352	.6068	.1476						
				0200	0	2.86		2353	.6172	.1578						
				0230	.10	2.91		2355	.6146	.1783						
				0300	.08	2.95		2359	.5630	.2175						
				0330	.20	3.05		2400	.6172	.2273						
				0350	0	3.05		0002	.6720	.2488						
				0420	.08	3.13		0005	.7648	.2847						
				0520	.18	3.31		0006	1.1895	.3010						
				0535	.28	3.38		0008	.8551	.3351						
	0600	.36	3.53		0012	.9846	.3955									
	0700	.13	3.66		0014	1.1748	.4313									
					0016	1.3425	.4737									
					0017	1.3782	.4964									
					0018	1.4691	.5201									
					0019	1.6131	.5458									
					0020	1.7248	.5736									
					0021	1.8969	.6038									
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.3599. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 10.1-8. 5/ RUNOFF RATES CORRECTED FOR PONDAGE BACK OF WEIR. 6/ SINCE NO SUITABLE RUNOFF EVENT OCCURRED IN 1962, THIS PREVIOUSLY UNREPORTED SELECTED EVENT FOR 1945 IS PRESENTED.																

1945 SELECTED RUNOFF EVENT			WATKINSVILLE, GEORGIA				WATERSHED W-1			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF ^{1/}			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of April 24-25, 1945 - Continued										
							4-25	0023	2.2685	.6732
								0024	2.5979	.7138
								0025	2.6911	.7579
								0026	2.7113	.8029
								0028	2.6298	.8919
								0029	2.4494	.9342
								0030	2.3555	.9742
								0032	2.1693	1.0496
								0034	2.0286	1.1196
								0036	1.6771	1.1814
								0038	1.4279	1.2332
								0040	1.2218	1.2774
								0042	1.0968	1.3160
								0044	.9447	1.3500
								0046	.8399	1.3797
								0047	.8035	1.3934
								0048	.7380	1.4062
								0049	.6632	1.4179
								0050	.6916	1.4292
								0051	.6122	1.4401
								0053	.5757	1.4600
								0056	.4849	1.4865
								0100	.4168	1.5165
								0105	.3414	1.5481
								0110	.2901	1.5744
								0115	.2434	1.5966
								0120	.2181	1.6158
								0135	.1513	1.6620
								0140	.1337	1.6739
								0200	.0814	1.7098
								0205	.0730	1.7162
								0220	.0593	1.7328
								0240	.0537	1.7514
								0255	.0463	1.7639
								0305	.0440	1.7714
								0335	.0449	1.7936
								0405	.0497	1.8172
								0435	.0483	1.8417
								0505	.0762	1.8728
								0605	.1830	2.0024
								0610	.1872	2.0178
								0615	.1807	2.0331
								0630	.1578	2.0758
								0640	.1421	2.1008
								0700	.1073	2.1424
								0800	.0355	2.2138
								0830	.0238	2.2286
								0900	.0175	2.2389
								1000	.0108	2.2531
								1100	.0074	2.2621
								1200	.0051	2.2683
								1300	.0035	2.2725
								1430	.0013	2.2761
								1614	.0000	2.2772

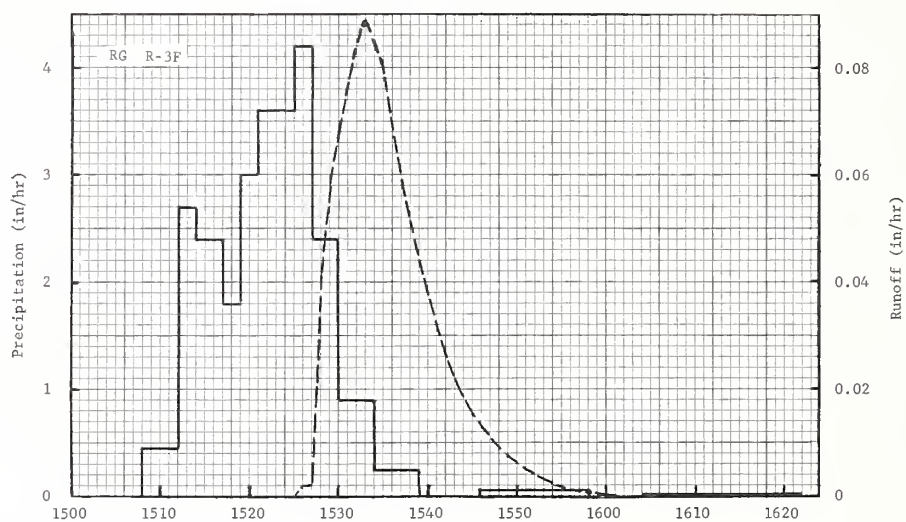
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.3599. ^{1/} RUNOFF RATES CORRECTED FOR PONDAGE BACK OF WEIR.



WATKINSVILLE, GEORGIA WATERSHED W-1



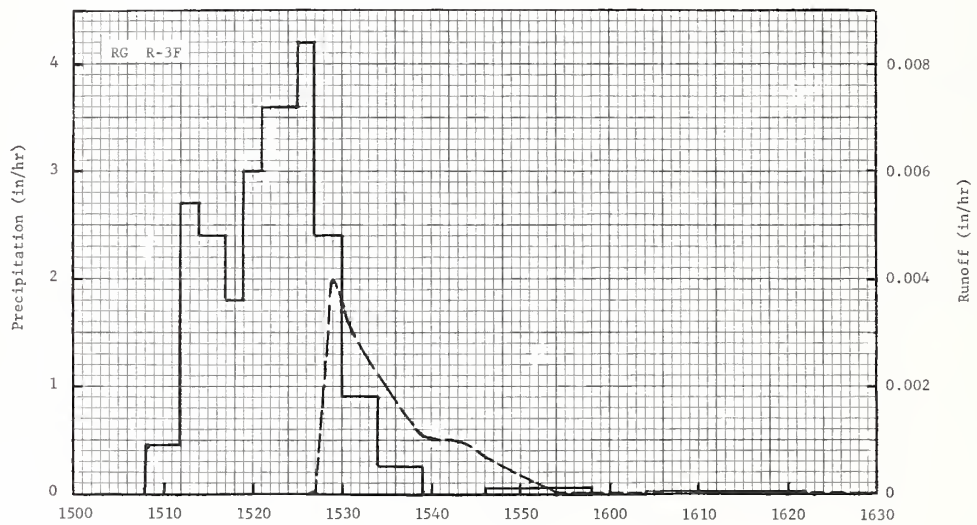
MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-IV AREA — 3.49 ACRES								13.03		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 1/ Q	3.08 .02	2.97 .00	3.03 .00	2.16 .00	3.87 T	1.74 .00	5.71 .07	1.24 .00	3.97 .02	2.08 .00	3.56 .01	4.19 .00	37.60 .12			
STA AV2/P (52-62) Q	2.46 .03	3.33 .02	3.42 T	3.09 .02	3.21 .02	3.49 .01	3.06 .01	3.52 .05	3.02 .02	2.32 T	2.24 T	2.95 .01	36.11 .19			
MEAN P 3/ 72 YR	3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	7-3	.254	7-3	.068	7-3	.068	7-3	.068	7-3	.068	7-3	.068	7-3	.068	7-3	.068
MAXIMUMS FOR PERIOD OF RECORD																
1951 TO 1962	5-5 1958	.75	5-5 1958	.206	5-5 1958	.213	5-5 1958	.228	5-5 1958	.241	5-5 1958	.241	5-5 1958	.244	5-5 1958	.244
Notes: Quality of record: P and Q, excellent. Watershed conditions: All cultivated; contour strips with rotation of corn, small grain, and hay. A mulch tillage program is practiced. No crop is removed except one clover hay crop each year. 1/Precipitation obtained from rain gage R-3F. 2/ Determined from continuous records, 1952-62. Precipitation and runoff records began Sept. 1951. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.																
1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA WATERSHED W-IV								13.03		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	RG R-3F		Event of September 4, 1962													
				RG	R-3F											
8-3	.55	.000	9-4	1508	.00	.00	9-4	1525	.000	.000						
8-7	.07	.000		1512	.45	.03		1526	.002	.002	T					
8-13	.50	.000		1514	2.70	.12		1527	.002	.002	T					
8-22	.12	.000		1517	2.40	.24		1528	.041	.001						
9-3	.07	.000		1519	1.80	.30		1529	.059	.002						
9-4	4/ .79	.000		1521	3.00	.40		1530	.067	.003						
				1525	3.60	.64		1532	.084	.005						
				1527	4.20	.78		1533	.089	.006						
				1530	2.40	.90		1534	.084	.008						
Watershed conditions: 48.5% in corn 7 to 9 ft. high, beginning to mature. 20.8% in clover-oat stubble-grass mixture 5 to 6 in. high, fair cover. 30.7% in clover, second year, 12 to 15 in. high, regrowth after June 14 cutting.																
				1534	.90	.96		1535	.080	.009						
				1539	.24	.98		1537	.059	.012						
				1546	.00	.98		1539	.044	.013						
				1558	.05	.99		1541	.032	.015						
				1604	.00	.99		1543	.022	.015						
				1622	.03	1.00		1545	.015	.016						
								1549	.007	.017						
								1554	.002	.017						
								1558	.001	.017						
								1601	.000	.017						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.519. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.3-5. 4/ FROM 0720 TO 1322.																



September 4, 1962

BLACKSBURG, VIRGINIA WATERSHED W-IV

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-V 13.04 AREA — 6.08 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 1/ Q	3.08 .02	2.97 .00	3.03 .00	2.16 .00	3.87 .00	1.74 .00	5.71 .02	1.24 .00	3.97 T	2.08 .00	3.56 .00	4.19 .00	37.60 .04			
STA AV 2/ (52-62) Q	2.46 .03	3.33 .02	3.42 T	3.09 T	3.21 .02	3.49 .01	3.06 T	3.52 .02	3.02 .01	2.32 T	2.24 T	2.95 .01	36.11 .12			
MEAN P 3/ 72 YR	3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	7-3	.097	1-6	.02	1-6	.02	1-6	.02	1-6	.02	1-6	.02	1-6	.02	1-6	.02
MAXIMUMS FOR PERIOD OF RECORD																
1952 TO 1962	5-5 1958	.704	5-5 1958	.154	5-5 1958	.157	2-26 1958	.173	5-5 1958	.176	5-5 1958	.178	2-24 1958	.180	2-23 1958	.184
Notes: Quality of records: P and Q, excellent. Watershed conditions: All cultivated; contour strips with a rotation of corn, small grain, and clover. A mulch tillage program is practiced. No crop residue is removed except one clover hay crop each year. 1/ Precipitation obtained from rain gage R-3F. 2/ Determined from continuous record, 1952-62. Precipitation and runoff records began Jan. 1952. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta at Blacksburg, Va.																
1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA WATERSHED W-V 13.04										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of September 4, 1962																
8-3	RG R-3F		9-4	RG	R-3F		9-4	1526	.000	.000						
8-7	.55	.000		1508	.00	.00		1527	T	T						
8-13	.07	.000		1512	.45	.03		1528	.002	T						
8-22	.50	.000		1514	2.70	.12		1529	.004	T						
	.12	.000		1517	2.40	.24										
9-3	.07	.000		1519	1.80	.30		1531	.003	T						
9-4	4/.79	.000		1521	3.00	.40		1535	.002	T						
				1525	3.60	.64		1539	.001	T						
				1527	4.20	.78		1543	.001	T						
				1530	2.40	.90		1554	T	.001						
				1534	.90	.96		1608	T	.001						
				1539	.24	.98		1630	.000	.001						
				1546	.00	.98										
				1558	.05	.99										
				1604	.00	.99										
Watershed conditions: 32.2% in corn 7 to 9 ft. high, beginning to mature. 24.8% in clover-oat stubble-grass mixture 5 to 6 in. high, fair cover. 33.6% in clover, second-year, 12 to 15 in. high regrowth after June 14 cutting. 9.4% in grassed waterway, good cover.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 6.131. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.3-5. 4/ FROM 0720 TO 1322.																



September 4, 1962

BLACKSBURG, VIRGINIA WATERSHED W-V

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-VI AREA — 7.70 ACRES								13.05	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	P 1/ Q	3.08 .06	2.97 .01	3.03 .01	2.16 .00	3.87 T	1.74 .00	5.71 .10	1.24 .00	3.97 .02	2.08 .00	3.56 .00	4.19 .00	37.60 .20	
STA AV (52-62)	2/P Q	2.46 .04	3.33 .06	3.42 .06	3.09 .05	3.21 .05	3.49 .02	3.06 .02	3.52 .07	3.02 .05	2.32 .01	2.24 .01	2.95 .06	36.11 .50	
MEAN P 72 YR	3/ Q	3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86	

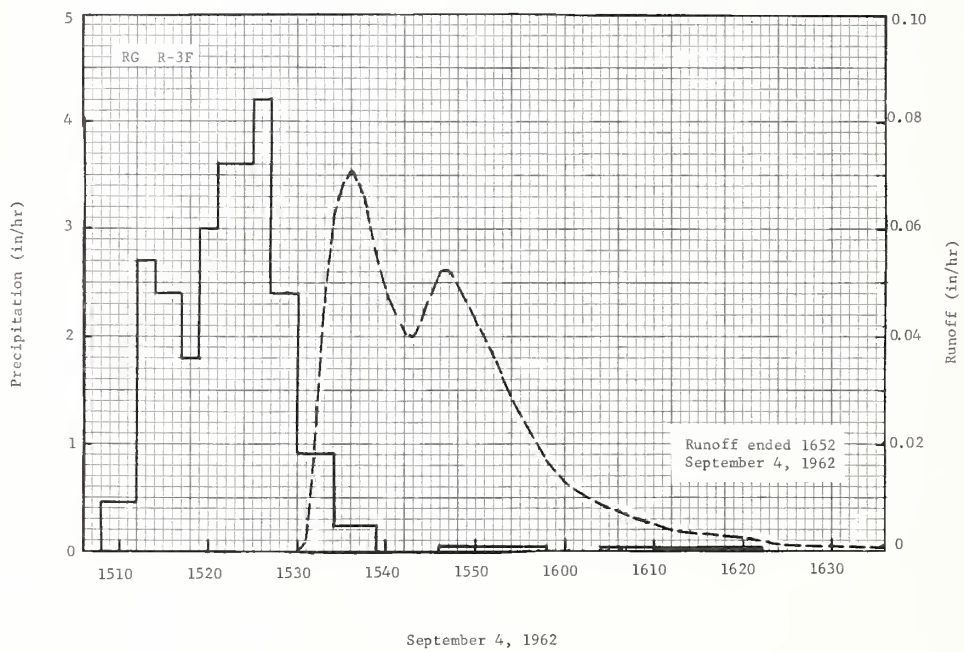
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	7-3	.325	7-3	.093	7-3	.102	7-3	.102	7-3	.102	7-3	.102	7-3	.102	7-3	.102

MAXIMUMS FOR PERIOD OF RECORD																
1951 TO 1962 4/	5-5 1958	.953	8-8 1958	.273	8-8 1958	.300	5-5 1958	.320	5-5 1958	.347	5-5 1958	.386	5-5 1958	.443	5-5 1958	.456

Notes: Quality of records: P and Q, excellent. Watershed conditions: All cultivated; contour strips with a rotation of corn, small grain, and clover. A mulch tillage program is practiced. No crop residue is removed except one clover hay crop per year. 1/ Precipitation obtained from rain gage R-3F. 2/ Determined from continuous records, 1952-62. Precipitation and runoff records began Sept. 1951. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.

1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA WATERSHED W-VI 13.05					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of September 4, 1962											
8-3	RG R-3F .55	.000	9-4	RG 1508	R-3F .00	.00	9-4	1530	.000	.000	
8-7	.07	.000		1512	.45	.03		1531	.002	.002	
8-13	.50	.000		1514	2.70	.12		1532	.022	.022	
8-22	.12	.000		1517	2.40	.24		1533	.047	.001	
9-3	.07	.000		1519	1.80	.30		1534	.062	.002	
9-4	5/ .79	.000		1521	3.00	.40		1535	.068	.003	
				1525	3.60	.64		1536	.071	.004	
				1527	4.20	.78		1537	.068	.005	
				1530	2.40	.90		1540	.047	.008	
Watershed conditions: 28.9% in corn 7 to 9 ft. high, beginning to mature. 22.0% in clover-oat stubble-grass mixture 5 to 6 in. high, fair cover. 28.9% in clover, second-year growth, 12 to 15 in. high, regrowth after cutting of June 14. 20.2% in grassed waterway, good cover.											
				1534	.90	.96		1542	.040	.010	
				1539	.24	.98		1543	.040	.010	
				1546	.00	.98		1544	.045	.011	
				1558	.05	.99		1546	.052	.013	
				1604	.00	.99		1547	.052	.014	
				1622	.03	1.00		1552	.036	.017	
								1555	.025	.019	
								1558	.017	.019	
								1600	.013	.020	
								1605	.008	.021	
								1608	.006	.022	
								1612	.004	.022	
								1621	.002	.023	
								1624	.001	.023	
								1652	.000	.023	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.764. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.3-5. 5/ FROM 0720 TO 1322.



BLACKSBURG, VIRGINIA WATERSHED W-VI

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA		THORNE CREEK WATERSHED W-I						13.06
						AREA — 3,054 ACRES (4.77 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/	2.59	3.17	3.15	2.47	3.67	2.88	5.19	5.10	3.31	3.29	3.71	4.90	43.43
	Q	.31	.40	1.00	.46	.36	.34	.11	.40	.10	.18	.19	.52	4.37
STA AVG	P	1.84	3.06	3.67	3.17	4.05	2.89	3.58	4.16	3.82	2.81	2.64	3.44	39.13
(57-62)	Q	.45	.51	.85	1.09	.87	.49	.32	.33	.20	.19	.20	.36	5.86
MEAN P	3/													
57 YR		2.94	2.70	3.26	2.79	3.29	3.48	4.22	3.35	2.75	2.75	2.19	2.85	36.57

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	10-14	.11	10-14	.05	10-14	.07	12-4	.11	12-4	.13	12-4	.15	12-4	.17	3-11	.35

MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO	5-17	.12	5-17	.10	5-17	.18	5-17	.30	5-17	.34	5-17	.38	5-17	.47	3-30	1.09
1962	1958		1958		1958		1958		1958		1958		1958		1960	

Notes: Quality of records: P - excellent, Q - good. Watershed conditions: Pasture, usually good cover of bluegrass and other native grasses and clovers, 62%; cultivated, common rotation is corn, small grain and hay, 27%; woods, 5%; idle, 5%; roads, 1%. 1/ Precipitation Thiessen weighted from R-1, R-2, and R-3. 2/ Determined from continuous records from June 1957 through 1962, precipitation Thiessen weighted. 3/ Mean P based on 57-yr (1906-62) U. S. Weather Bureau record period at Claytor Dam, Radford, Va.

Revision to 1956-59 Normal P: The monthly and annual Normals previously published were actually the U. S. Weather Bureau 25-yr (1931-55) Normals and not averages for 53-yr (1907-59) record period at Radford, Va., (Claytor Dam) as stated in footnote of USDA Misc. Pub. 945, p. 13.6-1.

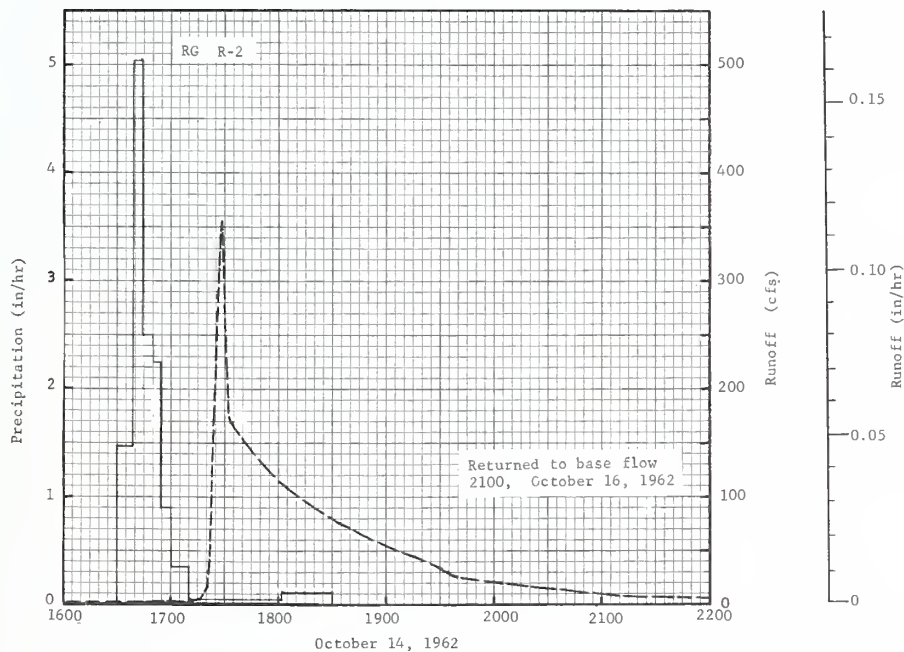
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA		THORNE CREEK WATERSHED W-I						13.06
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.235	.04	.01	.13	.14	.00	.00	.00	.00	.00	.00	.00	.00	
2	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
3	.00	.00	.00	.00	.00	.06	1.37	.59	.25	.21	.255	.00	.00	
4	.00	.00	.02	.00	.00	.00	.00	T	.65	1.18	.00	1.76	.00	
5	.07	T	.49	.00	.00	.05	.01	.16	.00	.07	.00	.23N	.00	
6	.77	.00	.12	.25	.00	.17	.01	.00	.00	.00	.00	.00	.00	
7	.00	.00	.00	.16	.00	.00	.00	.38	.00	.06	.00	.00	.00	
8	.045	.00	.00	.48	.24	.00	.28	.01	.00	.00	.00	.00	.00	
9	.00	1.08N	.53	.00	.00	.00	.00	.00	.00	.00	2.40	.00	.00	
10	.00	.00	.04	.00	.00	.00	.00	.00	.09	.00	.04	.00	.00	
11	.00	.085	.30	.13	.35	.27	.00	.00	.00	.00	.00	.06S	.00	
12	.00	.035	.26	.36	.00	1.08	.00	.00	.00	.00	.00	.00	.00	
13	.00	.00	.00	T	.00	.00	.00	.27	.00	.08	.00	.00	.00	
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.16	.00	.00	.00	
15	.35	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00	.00	.00	
16	.00	.27	.00	.00	1.22	.00	.00	1.91	1.20	.00	.00	.00	.00	
17	.00	.00	.00	.00	.00	.00	.04	.00	.68	.00	.01	.00	.00	
18	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.42	.00	.00	
19	.045	.15	.07N	.00	.06	.00	.00	.00	T	.00	.00	.00	.00	
20	.00	.00	.08	.00	.00	.61	.00	1.12	.06	.00	.03	.20M	.00	
21	.00	.29N	.87	.00	.02	T	.00	.14	.00	.21	.29	.60N	.00	
22	.04	T	.00	.00	.03	.18	.53	.52	.00	.00	.01	.18N	.00	
23	.05	.32	.00	T	.00	.27	.48	.00	.00	.00	.00	.00	.00	
24	.17	.23	.00	.00	.04	.02	.00	.00	.00	.00	.00	.22N	.00	
25	.03	.00	.00	.00	.11	.00	.41	.00	.16	.03	.245	.61N	.00	
26	.06	.17	.00	.49	.24	.09	.05	.00	.22	.00	.025	.07	.00	
27	.23	.00	.00	.00	.64	.08	.00	.00	T	.00	.00	.00	.00	
28	.43	.49	.00	.00	.32	.00	.04	.00	.00	.00	.00	.00	.00	
29	.00	-----	.00	.16	.00	.00	.57	.00	.00	.00	.00	.97M	.00	
30	.08N	-----	.03	.31	.00	.00	1.38	.00	.00	.09	.00	.00	.00	
31	.00	-----	.31	-----	.00	-----	.02	.00	-----	.20	-----	.00	.00	
TOTAL	2.59	3.17	3.15	2.47	3.67	2.88	5.19	5.10	3.31	3.29	3.71	4.90		
STA AV	1.84	3.06	3.67	3.17	4.05	2.89	3.58	4.16	3.82	2.81	2.64	3.44		

NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1, R-2 AND R-3. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, MISC. PUB. 945, P. 13.6-5.

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA			THORNE CREEK WATERSHED W-I 13.06									
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC						
1	.86	1.48	3.11	3.11	1.57	1.48	.46	.28	.49	.31	.34	.43						
2	.86	1.45	3.08	2.80	1.54	1.51	.46	.25	.46	.31	.31	.43						
3	.86	1.35	3.08	2.56	1.45	1.63	.95	.37	.46	.31	.34	.43						
4	.86	1.29	3.08	2.37	1.39	1.63	1.02	.43	.68	.95	.31	18.14						
5	.89	1.35	3.08	2.22	1.35	1.72	.52	.46	.55	.52	.28	3.51						
6	1.79	1.35	3.26	2.16	1.20	1.72	.52	.43	.46	.40	.25	3.33						
7	1.94	1.26	3.08	2.31	1.11	1.66	.49	.77	.46	.40	.25	2.86						
8	1.85	1.20	3.08	2.59	1.20	1.66	.46	.46	.46	.37	.18	2.62						
9	1.72	2.16	3.08	2.03	1.14	1.69	.46	.34	.46	.34	7.30	2.37						
10	1.66	2.16	3.39	1.97	1.11	1.76	.46	.46	.43	.34	2.86	2.03						
11	1.63	1.97	4.40	2.06	1.26	1.69	.46	.43	.43	.34	1.11	1.88						
12	1.48	2.03	7.45	2.28	1.11	2.25	.46	.43	.40	.31	.92	1.72						
13	1.35	2.00	6.93	2.00	1.08	1.72	.46	.43	.37	.31	.80	1.69						
14	1.29	1.91	6.25	1.91	1.08	1.72	.46	.49	.34	10.96	.74	1.66						
15	1.88	1.82	5.70	1.88	1.23	1.69	.46	.37	.34	1.02	.71	1.57						
16	1.45	2.00	5.11	1.66	5.73	1.69	.43	12.44	.59	.52	.62	1.42						
17	1.26	1.76	4.53	1.66	1.48	1.54	.43	1.23	.77	.43	.59	1.20						
18	1.17	1.69	4.22	1.66	1.32	1.54	.40	.80	.46	.40	.74	1.11						
19	1.11	1.76	4.03	1.66	1.23	1.66	.40	.71	.43	.34	.62	1.05						
20	1.11	1.54	3.79	1.66	1.26	1.88	.37	8.44	.40	.34	.52	1.05						
21	1.08	1.63	7.05	1.66	1.26	1.42	.34	1.60	.40	.40	.62	1.39						
22	1.05	1.63	4.53	1.60	1.29	1.42	.37	12.78	.40	.40	.71	1.32						
23	1.05	1.76	4.28	1.60	1.29	1.35	.49	1.26	.34	.40	.55	1.26						
24	1.11	2.19	4.10	1.57	1.29	.92	.37	1.02	.34	.40	.52	1.08						
25	1.11	2.09	3.91	1.57	1.29	.99	.37	.89	.34	.40	.52	1.08						
26	1.08	2.46	3.76	2.34	1.69	.95	.37	.77	.34	.40	.52	1.20						
27	1.05	2.37	3.51	1.66	1.51	.74	.31	.74	.37	.37	.46	1.23						
28	1.23	3.20	3.26	1.57	2.37	.49	.28	.68	.40	.37	.46	1.32						
29	1.35	-----	3.20	1.57	1.57	.46	.43	.62	.37	.43	.43	2.25						
30	1.54	-----	3.14	1.79	1.57	.43	.55	.55	.31	.40	.43	2.74						
31	1.48	-----	3.23	-----	1.54	-----	.59	.49	-----	.40	-----	1.26						
MEAN	1.30	1.82	4.12	1.98	1.50	1.44	.47	1.66	.44	.76	.83	2.15						
INCHES	.31	.40	1.00	.46	.36	.34	.11	.40	.10	.18	.19	.52						
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.0077935.																		
1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA			THORNE CREEK WATERSHED W-I 13.06									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF											
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)								
Event of October 14-16, 1962																		
10-14	RC R-2 .00	1/.0011	10-14	RC	R-2	.00	10-14	1100	.308	.0000								
											1630	1.47	.22	1340	.277	.0003		
											1639	5.04	.64	1640	.708	.0008		
											1644	2.50	.89	1648	1.417	.0008		
											1654	2.25	1.04	1652	1.139	.0008		
				1700	.90	1.13		1704	1.047	.0009								
				1710	.36	1.19		1716	4.558	.0011								
				1802	.03	1.22		1720	16.875	.0013								
				1830	.11	1.27		1722	47.362	.0017								
				10-14	RC	R-3		.00	1724	161.548	.0028	1728	354.907	.0084				
			1625				1.11								.13	1732	174.790	.0141
			1627				2.40								.21	1736	161.086	.0178
			1628				3.60								.27	1800	115.017	.0357
			1630				6.00								.47	1818	91.336	.0457
			1634				4.50								.77	1840	71.782	.0554
			1638				1.95								.90	1916	45.483	.0669
			1644				1.30								1.03	1928	34.829	.0695
			1648				.15								1.04	1938	24.697	.0711
			1651				.80								1.08	1944	24.574	.0719
			1655	.15	1.09	2000	21.495	.0739										
1707	.05	1.10	2028	14.966	.0766													
1731	.08	1.13	2124	8.007	.0801													
1815	.03	1.15	2200	5.851	.0815													
1930	.03	1.19	2216	5.266	.0819													
			2248	4.280	.0828													
			2316	3.788	.0834													
			2352	3.449	.0841													
			2400	3.511	.0842													
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0003247. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ RUNOFF PRIOR TO 1100.																		

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				THORNE CREEK WATERSHED W-1				13.06
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of October 14-16, 1962—Continued											
				RG	R-1	1.07	10-15	0040	2.895	.0849	
								0224	1.786	.0863	
				3 RG	AVG 1/	1.16		0328	1.478	.0868	
								0448	1.170	.0874	
								0620	.985	.0879	
								0800	.893	.0885	
								0928	.831	.0889	
								1400	.739	.0900	
								1520	.739	.0904	
								1900	.647	.0912	
								2400	.647	.0923	
							10-16	0200	.585	.0927	
								0820	.524	.0938	
								1652	.524	.0952	
								2100	2/.462	.0959	

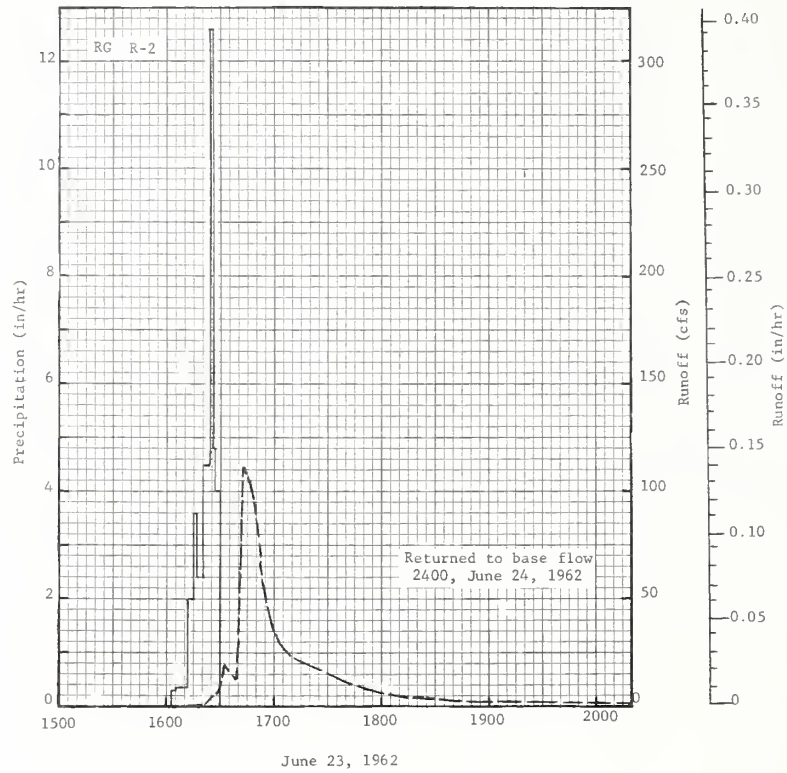
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0003247. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2, AND R-3.
2/ NORMAL BASE FLOW.



BLACKSBURG, VIRGINIA THORNE CREEK WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA		CRAB CREEK WATERSHED W-I						13.07					
AREA — 786 ACRES (1.23 SQ. MILES)																			
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL					
1962	P ^{1/}	2.43	3.58	3.49	1.83	1.87	3.76	6.03	1.04	2.68	2.96	3.96	4.06	37.71					
	Q	.97	1.12	1.70	.90	.51	.47	.45	.27	.15	.19	.33	.48	7.54					
STA AV ^{2/}	P	1.87	3.10	3.47	2.88	3.28	2.95	3.66	2.92	3.22	2.83	2.64	3.29	36.11					
	(57-62) Q	.76	.96	1.48	1.38	.91	.43	.37	.37	.29	.30	.36	.71	8.32					
MEAN P ^{3/}		3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86					
72 YR																			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																			
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS				
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME			
1962	6-23	.14	6-23	.05	6-23	.06	3-12	.11	3-11	.16	3-11	.23	3-12	.32	3-10	.68			
MAXIMUMS FOR PERIOD OF RECORD																			
19 57 TO	8-25	.17	4-3	.13	4-3	.22	4-3	.32	4-3	.42	4-3	.52	4-3	.73	3-27	1.76			
1962	1961		1960		1960		1960		1960		1960		1960		1960				
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Permanent pasture, usually good cover of native bluegrass combined with other grasses and clovers, 57%; alfalfa and other hay crops, 19%; small grain, 10%; farm woods (hardwood predominating), 12%; idle land, 1%; roads, 1%. (Total cultivated, 29%) 1/ Precipitation Thiessen weighted from rain gages R-1 and R-2. 2/ Determined from continuous records from Aug. 1957 through Dec. 1962. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.																			
Revision to 1960-61 Normal P: The monthly and annual Normals previously published on p. 60 of USDA Misc. Pub. 994, were based on 69-yr (1893-1961) U.S. Weather Bureau record period at Blacksburg, Va. combined with information from stations at or near Blacksburg, Va.																			
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA								CRAB CREEK WATERSHED W-I		13.07			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC							
1	.125	.10	.02	.22	.00	.00	.06	.00	.00	.00	.00	.00							
2	.00	.00	.00	.00	.00	.00	.18	.00	.00	T	.00	.00							
3	.00	.00	.00	.00	.00	.00	1.31	.40	.09	.53	.70S	.00							
4	.00	.00	.06S	.00	.00	.00	.00	T	.67	.90	.02	1.03							
5	.03	.06	.49S	.00	.00	T	.00	.06	T	.03	.05	.29S							
6	.81	.00	.03S	.04	.00	.30	.00	.04	.00	.00	.00	T							
7	.00	.00	.00	.25	.00	.00	.08	.09	.00	T	.00	.00							
8	.00	.00	.00	.60	T	.00	.10	.00	.00	.00	.00	.00							
9	.025	.93N	.36S	.00	.00	.00	.00	.05	.00	.00	2.09	T							
10	.06S	.00	.04	.00	.00	.00	.00	.00	.00	.00	T	.00							
11	.00	.07S	.58	.18	.43	.18	.00	.00	.00	.00	.00	.04S							
12	.00	.02S	.45	.32	.00	.86	T	.00	.00	.00	.00	.00							
13	.00	.00	.00	.00	.00	.00	.00	.22	.00	.79	.00	.00							
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00							
15	.31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
16	.00	.34	.00	.00	T	.00	T	.00	1.02	.00	T	.00							
17	.00	.00	.00	.00	.00	.00	.04	.10	.46	.00	.00	.00							
18	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.45	.00							
19	.04S	.14	.09S	.00	.00	.00	.00	.00	.00	.00	.00	.00							
20	.00	.00	.01	.00	.00	.18	.00	.00	T	.00	.04	.11							
21	.00	.24N	.83	.00	.00	.04	T	.00	.00	.23	.35	.62S							
22	.03	.02	.00	.00	.03	.22	.63	.08	.00	.00	T	.21S							
23	.07	.32	.00	.00	.00	1.62	.24	.00	.00	.00	.00	T							
24	.12	.55	.00	.00	.03	.00	.00	.00	.00	.00	.00	.17S							
25	T	.00	.00	.00	.35	.00	.43	.00	.11	.00	.24S	.59							
26	.09	.19	.00	.00	.06	.27	.04	.00	.23	.00	.02S	.08S							
27	.32	.00	.00	.00	.45	.09	.00	.00	.10	.00	.00	T							
28	.41	.56	.00	.00	.52	.00	T	.00	.00	T	.00	.00							
29	.00	-----	.00	.07	.00	.00	.73	.00	.00	.01	.00	.92S							
30	T	-----	.00	.15	.00	.00	2.16	.00	.00	.10	.00	.00							
31	.00	-----	.53	-----	.00	-----	.03	.00	-----	.32	-----	.00							
TOTAL	2.43	3.58	3.49	1.83	1.87	3.76	6.03	1.04	2.68	2.96	3.96	4.06							
STA AV	1.87	3.10	3.47	2.88	3.28	2.95	3.66	2.92	3.22	2.83	2.64	3.29							
NOTES: PRECIPITATION AMOUNTS ARE THIENSEN WEIGHTED VALUES FROM GAGES R-1 AND R-2. STA AV IS FOR PERIOD AUGUST 1957 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.7-6.																			

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA CRAB CREEK WATERSHED W-I 13.07						
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.71	1.50	1.93	1.66	.62	.44	.35	.48	.16	.13	.13	.22
2	.68	1.21	1.58	1.01	.62	.44	.36	.41	.16	.13	.13	.22
3	.69	1.05	1.40	1.01	.62	.44	1.15	.50	.16	.16	.19	.21
4	.84	1.00	1.36	1.01	.62	.44	.72	.42	.28	.49	.23	1.24
5	.84	.94	1.34	.97	.62	.44	.45	.37	.21	.22	.23	1.02
6	2.80	.88	1.30	.97	.62	.48	.39	.35	.19	.17	.17	.93
7	2.01	.78	1.55	1.04	.62	.47	.39	.35	.19	.16	.16	.55
8	1.47	.78	1.47	1.84	.62	.44	.39	.35	.19	.14	.16	.52
9	1.05	2.16	1.42	1.28	.62	.44	.37	.35	.19	.13	2.26	.46
10	.97	1.55	1.69	1.17	.62	.44	.35	.32	.16	.13	1.34	.36
11	.92	1.21	2.78	1.27	.69	.46	.35	.30	.13	.13	.48	.31
12	.90	1.30	7.48	1.39	.59	.71	.35	.30	.13	.13	.36	.30
13	.82	1.09	3.26	1.26	.56	.53	.35	.30	.13	1.40	.32	.28
14	.78	.94	2.27	1.11	.53	.39	.35	.33	.13	.36	.26	.27
15	1.51	.93	1.95	1.06	.50	.39	.34	.30	.13	.18	.23	.52
16	1.03	1.11	1.65	.99	.50	.39	.30	.30	.20	.16	.22	.48
17	.85	1.04	1.43	.93	.50	.39	.30	.30	.28	.16	.22	.27
18	.80	1.14	1.36	.93	.45	.39	.30	.30	.15	.14	.39	.28
19	.85	1.11	1.39	.89	.44	.39	.30	.30	.13	.13	.29	.28
20	.77	.94	1.32	.85	.44	.45	.30	.25	.13	.13	.25	.28
21	.77	.99	3.12	.81	.44	.41	.30	.19	.13	.14	.38	.29
22	.78	1.17	1.79	.76	.44	.39	.33	.19	.13	.15	.39	.52
23	.86	1.31	1.55	.74	.44	2.69	.39	.19	.13	.13	.27	.48
24	.79	3.45	1.39	.68	.44	.71	.33	.19	.13	.13	.25	.37
25	.81	1.88	1.29	.68	.48	.44	.38	.19	.14	.13	.25	.39
26	.77	1.89	1.25	.68	.50	.46	.35	.19	.15	.13	.25	.43
27	1.09	1.62	1.21	.68	.47	.41	.33	.17	.16	.13	.25	.56
28	1.26	2.06	1.11	.65	.74	.39	.32	.16	.16	.13	.24	.62
29	1.24	-----	1.01	.62	.50	.37	.46	.16	.16	.13	.22	1.44
30	1.25	-----	1.15	.67	.47	.35	2.33	.16	.16	.13	.22	1.22
31	1.28	-----	1.42	-----	.44	-----	1.13	.16	-----	.18	-----	.69
MEAN	1.04	1.32	1.81	.99	.54	.52	.48	.29	.16	.20	.36	.52
INCHES	.97	1.12	1.70	.90	.51	.47	.45	.27	.15	.19	.33	.48
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.030282.												
1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA CRAB CREEK WATERSHED W-I 13.07						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of June 23-24, 1962												
6-23	RG R-2 1/.29	2/.0088	6-23	RG	R-2		6-23	1612	.539	.0000		
								1619	.721	.0001		
								1622	1.466	.0002		
								1624	3.994	.0003		
								1628	6.356	.0007		
								1632	19.465	.0018		
								1638	13.006	.0038		
								1640	28.310	.0047		
								1643	111.163	.0091		
								1648	94.947	.0199		
								1652	66.741	.0267		
								1701	34.000	.0363		
								1708	23.349	.0405		
								1716	21.645	.0443		
								1740	10.890	.0525		
1814	4.391	.0580										
1840	2.798	.0599										
1912	2.029	.0616										
2020	1.411	.0640										
							6-24	2100	1.316	.0652		
								2120	1.339	.0657		
								2140	2.092	.0664		
								2152	2.370	.0670		
								2216	2.346	.0682		
								2400	1.649	.0726		
								0220	.999	.0765		
								0620	.682	.0807		
								2400	4/.499	.0940		
								NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0012618. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/1429 TO 1440. 2/PRIOR TO 1612. 3/THIESSEN WEIGHTED FOR RG R-1 AND R-2. 4/NORMAL BASE FLOW.				



BLACKSBURG, VIRGINIA CRAB CREEK WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA				BRUSH CREEK WATERSHED W-I 13.08						
						AREA—893 ACRES (1.40 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ^{1/}	3.10	2.99	3.87	2.83	1.88	1.59	6.82	1.34	2.85	2.10	5.51	3.72	38.60		
	Q	2.21	2.17	2.90	2.56	1.46	1.00	1.23	.81	.72	.85	1.87	1.78	19.56		
STA AV ^{2/} /P		2.06	3.47	3.39	3.39	3.92	2.60	3.75	4.10	4.66	2.95	2.81	3.51	40.61		
	(57-62) Q	1.86	2.41	2.70	2.54	2.05	1.21	1.12	1.12	1.69	1.54	1.58	2.14	21.96		
MEAN P ^{3/}		3.20	3.11	3.66	3.16	3.71	4.20	4.67	3.97	2.99	2.72	2.37	3.10	40.86		
72 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	11-9	.07	11-9	.06	11-9	.12	11-9	.28	11-9	.42	11-9	.55	11-9	.63	3-10	1.15
MAXIMUMS FOR PERIOD OF RECORD																
1957-62	9-30	1.16	9-30	.62	9-30	.91	9-30	1.62	9-30	2.17	9-29	2.59	9-29	2.81	9-29	3.23
1959	1959		1959		1959		1959		1959		1959		1959		1959	
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Permanent pasture, usually a fair cover of native grasses, 60%; cultivated, a common rotation of corn, small grain and hay, 11%; farm woods, a mixture of hardwoods and conifers, 29%. Very few soil conservation practices have been applied to area. 1/ Precipitation Thiessen weighted from rain gages R-1 and R-2. 2/ Determined from continuous records from Aug. 1957 through Dec. 1962. Precipitation Thiessen weighted. 3/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Blacksburg, Va. Missing records for eleven months from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.																
Revision to 1956-59 Normal P: The monthly and annual Normals previously published on p. 13.8-1 of USDA Misc. Pub. 945 were based on 67-yr (1893-1959) U.S. Weather Bureau record period at Blacksburg, Va. combined with information from stations at or near Blacksburg, Va.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA								BRUSH CREEK WATERSHED W-I 13.08		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.38S	.11	.01	.24	.02	.00	.10	.00	.00	.00	.00	.00				
2	.00	.00	.00	.00	.00	.02	.09	.00	.00	.06	.00	.00				
3	.00	.00	.00	.00	.00	.00	1.42	.30	.07	.83	.62S	.03				
4	.00	.00	.05S	.00	.00	.00	.00	.05	.47	.52	.43	1.09				
5	.10	.04	.36S	.00	.00	.03	.00	.00	.00	.00	.10	.17S				
6	.74	.00	.15S	.24	.00	.00	.00	.29	.00	.00	.00	.00				
7	.00	.00	.00	.53	.00	.00	.01	.00	.00	.01	.00	.00				
8	.00	.00	.00	.65	.04	.00	.02	.00	.00	.00	.00	.00				
9	.00	.51S	.29S	.00	.00	.00	.00	.03	.03	.00	2.97	.04S				
10	.09S	.00	.03	.00	.00	.00	.00	.00	.03	.00	.01	.00				
11	.00	.05S	.44	.24	.22	.14	.00	.00	.00	.00	.00	.00				
12	.00	.03S	.45	.17	.00	.90	.00	.00	.00	.00	.00	.00				
13	.00	.00	.00	.01	.00	.00	.00	.29	.00	.00	.00	.00				
14	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01	.00	.00				
15	.35	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00	.00				
16	.00	.34	.00	.00	.02	.00	.53	.00	1.20	.00	.01	.00				
17	.00	.00	.00	.00	.00	.00	.00	.00	.34	.00	.05	.00				
18	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.64	.00				
19	.10S	.10	.08S	.00	.00	.03	.00	.00	.00	.00	.00	.00				
20	.00	.00	.03	.00	.00	.11	.00	.00	.00	.00	.06	.11S				
21	.00	.19S	.60	.00	.00	.00	.00	.34	.00	.20	.33	.94S				
22	.09	.03	.00	.00	.06	.07	.62	.03	.00	.00	.01	.00				
23	.08	.43	.00	.00	.00	.01	.33	.00	.00	.00	.00	.01				
24	.18	.74	.00	.00	.00	.00	T	.00	.00	.00	T	.12S				
25	.04	.00	.00	.00	.28	.24	.55	.00	.09	.00	.23S	.60S				
26	.08	.19	.00	.37	.08	.04	.00	.00	.47	.00	.00	.13				
27	.38	.00	.00	.00	.44	.00	.00	.00	.15	.00	.00	.00				
28	.49S	.20	.00	.00	.50	.00	.01	.00	.00	.00	.05	.00				
29	.00	-----	.00	.10	.00	.00	.94	.00	.00	.02	.00	.48S				
30	.00	-----	.00	.28	.00	.00	2.17	.00	.00	.12	.00	.00				
31	.00	-----	1.38	-----	.00	-----	.03	.00	-----	.33	-----	.00				
TOTAL	3.10	2.99	3.87	2.83	1.88	1.59	6.82	1.34	2.85	2.10	5.51	3.72				
STA AV	2.06	3.47	3.39	3.39	3.92	2.60	3.75	4.10	4.66	2.95	2.81	3.51				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED TOTALS FROM R-1 AND R-2. STA AV IS FOR PERIOD AUGUST 1957 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 13.8-5.																

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA		BRUSH CREEK WATERSHED W-I				13.08
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.88	3.81	2.79	7.39	2.22	1.34	.91	1.41	.68	.81	1.03	1.37
2	1.85	2.96	2.54	3.80	2.03	1.33	1.11	1.22	.61	.85	.95	1.39
3	1.98	2.61	2.47	3.14	1.87	1.40	3.79	1.59	.68	1.92	1.69	1.35
4	2.36	2.31	2.40	2.88	1.85	1.42	1.64	1.40	1.33	3.08	1.78	6.17
5	2.61	2.12	2.47	2.68	1.85	1.39	1.13	1.19	.88	1.38	2.01	3.43
6	9.24	2.08	2.51	2.85	1.89	1.35	1.04	1.29	.78	1.08	1.60	2.58
7	4.57	1.93	2.74	5.47	1.94	1.31	.98	1.27	.74	.96	1.31	2.00
8	3.04	2.04	2.65	8.21	1.82	1.28	.95	1.07	.72	.95	1.19	1.89
9	2.37	3.37	2.50	4.51	1.94	1.24	.90	.97	.79	.91	16.54	1.76
10	2.22	2.50	3.55	3.49	1.94	1.12	.81	.94	.81	.87	6.96	1.74
11	2.11	2.23	5.32	3.92	2.13	1.23	.78	.87	.71	.86	2.42	1.74
12	2.48	2.35	15.48	3.74	1.94	2.75	.77	.86	.63	.84	1.89	1.68
13	1.93	2.17	5.69	3.31	1.86	1.76	.85	1.00	.62	.83	1.62	1.63
14	1.91	2.11	3.84	2.87	1.72	1.35	1.07	1.13	.60	.85	1.47	1.63
15	3.82	2.01	3.35	2.80	1.92	1.23	1.00	.93	.60	.85	1.41	1.58
16	2.43	2.68	3.01	2.75	1.78	1.19	1.54	.93	2.22	.85	1.37	1.53
17	2.04	2.36	2.70	2.55	1.63	1.10	1.02	.87	1.94	.85	1.37	1.66
18	1.94	2.19	2.55	2.60	1.54	1.03	.86	.82	.92	.85	3.30	1.70
19	2.02	2.94	2.74	2.49	1.43	1.03	.77	.79	.77	.85	1.93	1.70
20	1.96	2.43	2.61	2.41	1.43	1.25	.73	.76	.77	.85	1.79	1.64
21	1.95	2.08	5.22	2.31	1.39	1.08	.71	.98	.73	1.00	2.26	1.58
22	2.28	2.09	3.25	2.16	1.49	1.13	1.06	1.04	.71	.96	2.03	3.36
23	2.40	3.56	2.86	2.05	1.37	1.03	1.65	.88	.79	.92	1.62	2.44
24	2.38	10.83	2.60	2.05	1.34	1.02	.96	.86	.78	.92	1.49	1.90
25	2.36	3.87	2.49	2.05	1.48	1.01	1.74	.82	.90	.88	1.59	1.86
26	2.22	3.67	2.43	2.46	1.51	1.31	1.08	.83	1.45	.86	1.60	2.44
27	2.94	2.99	2.30	2.22	1.76	1.03	.83	.85	1.28	.83	1.57	2.55
28	3.39	3.02	2.24	2.05	3.19	1.04	.77	.77	.96	.88	1.57	2.36
29	2.75	-----	2.21	2.22	1.67	.95	2.56	.70	.87	.92	1.46	3.29
30	2.64	-----	2.21	2.68	1.48	.90	8.71	.70	.82	1.04	1.40	2.70
31	2.94	-----	7.13	-----	1.42	-----	3.30	.70	-----	1.45	-----	2.70
MEAN	2.68	2.90	3.51	3.21	1.77	1.25	1.48	.98	.90	1.03	2.34	2.17
INCHES	2.21	2.17	2.90	2.56	1.46	1.00	1.23	.81	.72	.85	1.87	1.78

NOTES:

TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.026654.

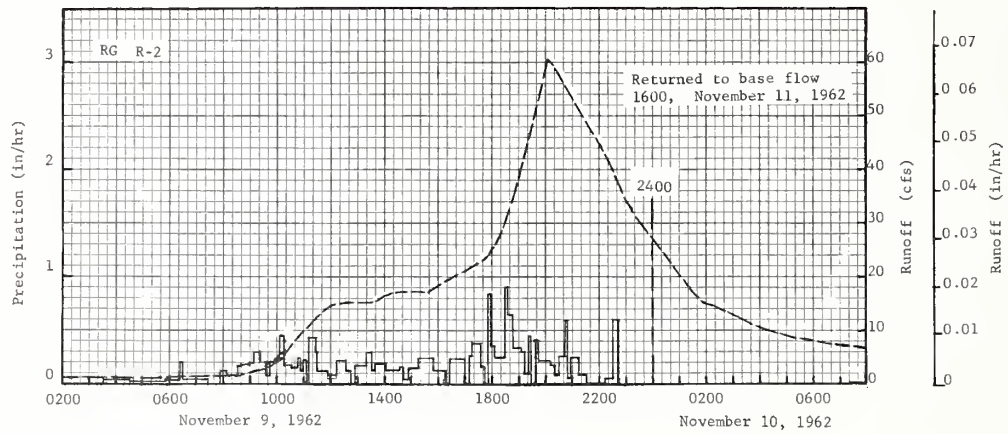
1962 SELECTED EVENT			BLACKSBURG, VIRGINIA				BRUSH CREEK WATERSHED W-I				13.08
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of November 9-11, 1962											
11 -9	RG R-2 0	1/.0030	11 -9	RG R-2			11 -9				
				0335	.00	.00		0220	1.135	.0000	
				0430	.04	.04		0336	1.135	.0016	
				0530	.03	.07		0540	1.216	.0043	
				0550	.03	.08		0740	1.432	.0073	
Watershed conditions: 60% pasture with a fair cover of native grasses and clovers, mostly dormant; 29% farm woods, a mixture of conifers and dormant hardwoods, excellent cover; 4% corn stubble; 7% hay and dormant meadow, good cover.											
				0624	.04	.10		0832	1.657	.0087	
				0627	.20	.11		0904	2.107	.0099	
				0727	.05	.16		0936	2.845	.0113	
				0755	.00	.16		1008	4.736	.0136	
				0806	.11	.18		1040	8.014	.0174	
				0830	.08	.21		1104	10.571	.0215	
				0840	.18	.24		1200	14.659	.0346	
				0859	.19	.30		1220	15.326	.0401	
				0911	.20	.34		1236	15.659	.0447	
				0923	.30	.40		1332	15.659	.0609	
				0935	.20	.44		1400	16.388	.0692	
				0943	.08	.45		1428	17.081	.0779	
				0957	.21	.50		1540	17.090	.1007	
				1007	.24	.54		1708	21.187	.1319	
				1015	.45	.60		1740	23.042	.1450	
				1034	.19	.66		1800	24.942	.1539	
				1045	.16	.69		1840	32.776	.1752	
				1050	.24	.71		1924	46.193	.2074	
				1059	.13	.73		2004	60.077	.2467	
				1107	.23	.76		2016	59.888	.2601	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0011106. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ PRIOR TO 0220.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.001106. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ PRIOR TO 0220.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				BRUSH CREEK WATERSHED W-1				13.08
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of November 9-11, 1962-Continued											
			11-9	1116	.00	.76	11-9	2040	56.107	.2858	
				1130	.43	.86		2202	44.212	.3619	
				1136	.30	.89		2300	34.082	.4040	
				1155	.13	.93		2324	30.714	.4184	
				1217	.08	.96		2400	27.635	.4378	
				1234	.21	1.02	11-10				
				1245	.11	1.04		0128	17.739	.4748	
				1253	.00	1.04		0152	15.551	.4822	
				1320	.18	1.12		0220	14.506	.4900	
				1330	.30	1.17		0400	10.679	.5133	
				1339	.13	1.19		0500	9.076	.5242	
				1401	.19	1.26		0630	7.564	.5381	
				1432	.12	1.32		0840	6.042	.5545	
				1440	.15	1.34		0952	5.430	.5621	
				1454	.04	1.35		1240	4.556	.5777	
				1518	.15	1.41		1540	3.845	.5917	
				1550	.24	1.54		2040	3.296	.6115	
				1618	.13	1.60		2400	3.016	.6232	
				1625	.00	1.60	11-11				
				1650	.24	1.70		1308	2.260	.6617	
				1700	.24	1.74		1600	1/2.152	.6687	
				1709	.00	1.74					
				1718	.27	1.78					
				1737	.38	1.90					
				1745	.15	1.92					
				1750	.00	1.92					
				1755	.84	1.99					
				1807	.35	2.06					
				1831	.23	2.15					
				1837	.90	2.24					
				1848	.65	2.36					
				1903	.32	2.44					
				1915	.30	2.50					
				1921	.10	2.51					
				1925	.45	2.54					
				1938	.00	2.54					
				1941	.40	2.56					
				2010	.21	2.66					
				2020	.18	2.69					
				2028	.08	2.70					
				2043	.24	2.76					
				2045	.60	2.78					
				2058	.05	2.79					
				2115	.25	2.86					
				2128	.09	2.88					
				2215	.00	2.88					
				2231	.04	2.89					
				2240	.60	2.98					
				2242	.60	3.00					
				RG	R-1	2.94					
				2 RG	AVG 2/	2.96					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0011106. 1/ NORMAL BASE FLOW. 2/ THIESSEN WEIGHTED FOR RG R-1, R-2.



BLACKSBURG, VIRGINIA BRUSH CREEK WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA AREA — 182 ACRES			POWELLS CREEK WATERSHED W-I 13.09					
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P ¹ / _Q	5.70	3.66	4.05	2.94	5.65	3.42	2.72	4.92	4.08	.62	6.88	2.29	46.93
		3.48	2.37	2.85	2.17	1.27	.64	.25	.51	.39	.25	2.56	.91	17.65
STA AV ² / _P (58-62)	Q	3.28	3.44	3.66	3.98	4.23	2.78	3.36	4.76	2.68	3.43	2.61	3.62	41.83
		2.29	2.25	2.24	2.14	1.28	.42	.25	.43	.33	.73	.89	1.63	14.88
MEAN P ³ / _{72 YR}		3.52	3.38	3.76	3.45	3.90	3.81	4.48	4.39	3.45	2.79	2.63	3.30	42.86

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	5-31	1.31	5-31	.78	5-31	.87	5-31	.92	1-6	1.64	1-6	1.88	1-6	1.96	1-3	2.21

MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1962	5-31 1962	1.31	5-31 1962	.77	5-31 1962	.87	12-28 1958	.98	1-6 1962	1.64	12-28 1958	1.95	12-28 1958	2.25	12-28 1958	2.85

Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Pasture, native grass mixtures, usually good to excellent cover, 50%; alfalfa and other hay crops, 19%; row crops, mostly corn and tobacco, 7%; small grain, 7%; farm woods, predominantly hardwood, 17%. (Total cultivated, 33%) ¹/ Precipitation Thiessen weighted from rain gages R-1 and R-2. ²/ Determined from continuous records from Jan. 1958 through Dec. 1962. ³/ Mean P based on 72-yr (1891-1962) U.S. Weather Bureau record period at Danville, Va. Missing monthly totals for July and Aug. 1946 were estimated from nearby Weather Bureau records at Danville, Va., Airport.

Revision to 1960-61 Normal P: The monthly and annual Normals previously published were actually the U.S. Weather Bureau 25-yr (1931-55) Normals and not averages for the 72-yr (1890-1961) record period at Danville, Va., as stated in footnote ²/, of USDA Misc. Pub. 994, p. 69.

1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA POWELLS CREEK WATERSHED W-I 13.09							
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.69	.00	.06	.33	.00	.00	.02	.01	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.23	.02	.00	.00	.00	.06	.00	.00
3	.00	.00	.00	.00	.00	.00	.67	.62	.00	.00	.85S	.02	.00
4	.00	.00	.03S	.00	.00	.07	.20	.00	.10	.22	.07S	.03	.00
5	.02	.00	.62S	.00	.00	T	.00	1.23	.00	.02	.34	.21	.00
6	2.53	.00	.24S	.07	.00	.03	.00	.35	.00	.00	.00	.01	.00
7	.00	.00	.06S	.43	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.03S	.95	.20	.00	.02	.01	.00	.00	.00	.00	.00
9	.00	.47S	.43	.00	.00	.00	.00	1.47	.02	.00	2.87	.00	.00
10	.25S	.00	.02	.00	.00	.00	.00	.00	.01	.00	.02	.00	.00
11	.00	.00	.46	.30	.38	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.03S	.21	.27	.01	1.06	.00	.00	.00	.00	.00	.00	.00
13	.01	.01	.00	.00	.00	1.20	.13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.03	.00	.00	.09	.00	.00	.00
15	.32	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00
16	.00	.37	.00	.00	.00	.00	.00	.04	1.73	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.33	1.00	.00	.00	.00	.00
18	.00	.16	.00	.08	.00	.00	.00	.00	.00	.00	1.21	.00	.00
19	.02	.80	.05	.00	.01	.09	.00	.00	.00	.00	.00	.00	.00
20	.01	.00	.00	.00	.00	.20	.00	.00	.04	.00	.08	.00	.00
21	.00	.21	.87	.00	.00	.00	.01	.83	.01	.12	.84	.29S	.00
22	.00	.09	.00	.00	.00	.03	.00	.00	.00	.00	.30	.19S	.00
23	.08	.63	.00	.00	.00	.08	.37	.00	.00	.00	.00	.00	.00
24	.19	.10	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.70	.01	.32	.00	.00	.00	.19S	.66S	.00
26	.01	.68	.10	.00	1.04	.40	.00	.00	.86	.00	.05	.20	.00
27	.62S	.01	.00	.00	.05	.00	.00	.03	.31	.00	.00	.00	.00
28	.93S	.10	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	-----	.00	.50	.00	.00	.88	.00	.00	.00	.00	.68S	.00
30	.02	-----	.00	.01	.00	.02	.00	.00	.00	.00	.00	.00	.00
31	.00	-----	.87	-----	2.62	-----	.00	.00	-----	.17	-----	.00	.00
TOTAL	5.70	3.66	4.05	2.94	5.65	3.42	2.72	4.92	4.08	.62	6.88	2.29	
STA AV	3.28	3.44	3.66	3.98	4.23	2.78	3.36	4.76	2.68	3.43	2.61	3.62	

NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED TOTALS FROM R-1 AND R-2. STA AV IS FOR PERIOD JANUARY 1958 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.9-8.

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA POWELLS CREEK WATERSHED W-I							13.09
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.18	.31	.45	2.35	.10	.27	.06	.05	.05	.07	.06	.12	
2	.20	.28	.36	.26	.09	.17	.06	.06	.05	.06	.06	.12	
3	.22	.22	.33	.21	.08	.15	.16	.12	.05	.06	.25	.12	
4	.45	.19	.32	.26	.08	.15	.16	.07	.06	.09	.09	.12	
5	.41	.18	.59	.33	.07	.12	.08	.08	.06	.09	.19	.15	
6	13.99	.15	.77	.41	.06	.11	.06	.61	.06	.08	.09	.17	
7	1.03	.14	3.05	.55	.06	.09	.06	.07	.04	.07	.08	.12	
8	.34	.13	.50	6.85	.07	.07	.06	.06	.04	.07	.08	.12	
9	.22	.59	.49	.49	.08	.07	.06	1.32	.04	.06	6.62	.12	
10	.21	.25	2.59	.29	.07	.06	.06	.08	.04	.06	.98	.11	
11	.19	.19	2.62	.76	.12	.06	.06	.06	.04	.06	.24	.10	
12	.18	.18	2.40	1.05	.07	.21	.05	.06	.04	.06	.19	.09	
13	.16	.17	.34	.67	.06	.56	.05	.06	.04	.06	.17	.08	
14	.17	.16	.25	.15	.06	1.38	.04	.06	.04	.06	.14	.09	
15	.95	.13	.20	.15	.06	.18	.04	.05	.04	.06	.13	.09	
16	.27	.33	.17	.15	.06	.13	.04	.06	.19	.06	.12	.11	
17	.19	.19	.15	.15	.06	.11	.04	.07	.71	.06	.12	.12	
18	.18	.20	.15	.16	.04	.09	.04	.06	.08	.06	2.73	.11	
19	.17	3.44	.14	.16	.04	.08	.04	.06	.06	.06	.33	.12	
20	.17	.36	.12	.13	.04	.12	.04	.05	.06	.06	.28	.11	
21	.17	.40	1.92	.12	.04	.08	.04	.21	.06	.06	2.58	.10	
22	.17	.49	.33	.11	.04	.06	.04	.08	.06	.06	2.18	.26	
23	.18	3.39	.22	.10	.04	.06	.05	.06	.06	.06	.31	.15	
24	.23	.71	.18	.09	.05	.06	.04	.05	.06	.06	.24	.12	
25	.19	.29	.17	.09	.09	.06	.06	.05	.06	.06	.28	.37	
26	.17	4.10	.22	.09	.48	.11	.05	.05	.18	.05	.29	.67	
27	.67	.59	.19	.08	.09	.06	.05	.05	.39	.05	.21	.39	
28	2.13	.39	.19	.08	.19	.06	.05	.05	.10	.05	.19	.25	
29	.74	-----	.19	.23	.08	.06	.12	.05	.08	.05	.19	1.72	
30	1.62	-----	.16	.12	.06	.06	.06	.05	.07	.05	.14	.42	
31	.46	-----	2.06	-----	7.13	-----	.05	.05	-----	.06	-----	.20	
MEAN	.86	.65	.70	.55	.31	.16	.06	.13	.10	.06	.65	.23	
INCHES	3.48	2.37	2.85	2.17	1.27	.64	.25	.51	.39	.25	2.56	.91	

NOTES:

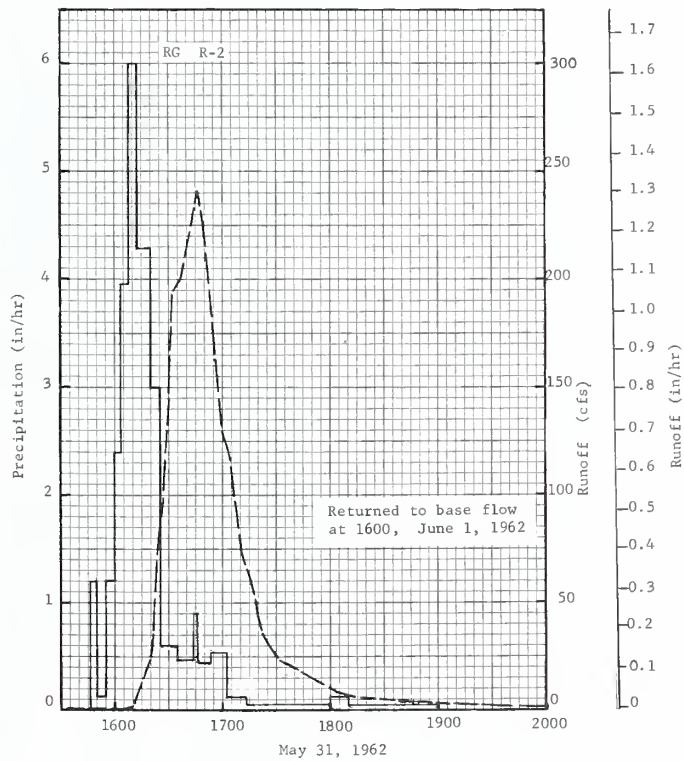
TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.130779.

1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA POWELLS CREEK WATERSHED W-I							13.09
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
Event of May 31 — June 1, 1962													
5-31	RG, R-2 1/.02	2/.0055	5-31	RG	R-2		5-31						
				1546	.00	.00		1600	.108	.0000			
				1548	1.20	.04		1604	.351	.0001			
				1550	1.20	.08		1608	1.452	.0004			
				1555	.12	.09		1612	3.913	.0014			
				1600	1.20	.19		1620	25.256	.0120			
				1603	2.40	.31		1622	39.471	.0179			
				1608	3.96	.64		1624	83.342	.0290			
				1613	6.00	1.14		1626	91.679	.0449			
				1620	4.29	1.64		1630	144.881	.0879			
				1622	3.00	1.74		1632	193.482	.1186			
				1625	3.00	1.89		1636	198.967	.1899			
				1635	.60	1.99		1646	241.163	.3898			
				1644	.47	2.06		1650	222.362	.4739			
				1646	.90	2.09		1654	187.499	.5484			
				1653	.43	2.14		1700	128.931	.6346			
				1703	.54	2.23		1704	116.726	.6792			
				1713	.12	2.25		1708	88.020	.7164			
				1800	.05	2.29		1710	73.616	.7311			
				1810	.12	2.31		1712	70.142	.7441			
				1900	.04	2.34		1718	51.311	.7772			
								1720	43.952	.7859			
								1722	35.589	.7931			
								1728	27.550	.8103			
								1732	23.747	.8196			
				RG	R-1	2.82							
				2 RG	AVG 3/	2.62							

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0054491. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ 1347 TO 1354. 2/ PRIOR TO 1600. 3/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA POWELLS CREEK WATERSHED W-I				13.09			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of May 31-June 1, 1962-Continued										
							5-31	1738	20.495	.8317
								1804	9.104	.8666
								1820	6.027	.8776
								1840	4.313	.8870
								1956	1.764	.9080
								2036	1.233	.9134
								2116	.943	.9174
								2212	.697	.9215
								2340	.495	.9263
								2400	.497	.9272
							6 -1	0400	.378	.9368
								1120	.246	.9492
								1600	1/.171	.9546

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0054491. 1/ NORMAL BASE FLOW.



BLACKSBURG, VIRGINIA POWELLS CREEK WATERSHED W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK WATERSHED W-I 13.10 AREA—1,471 ACRES (2.30 SQ. MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ¹ / Q	5.61 2.17	3.30 1.44	3.96 1.71	2.75 1.52	4.29 .82	4.92 .89	2.22 .54	3.79 .56	3.59 .48	.47 .48	6.77 1.38	2.15 .80	43.82 12.79			
STA AV ² / (58-62) Q	3.40 1.25	3.58 1.42	3.68 1.40	4.16 1.48	3.86 1.20	3.54 .85	2.96 .43	5.62 .78	3.16 .51	3.32 .85	2.60 .70	3.52 1.10	43.40 11.97			
MEAN P ³ / 32 YR	3.40	3.21	3.87	3.78	3.81	4.29	4.75	4.35	3.71	2.75	3.12	3.24	44.28			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	1-6	.19	1-6	.17	1-6	.27	1-6	.47	1-6	.70	1-6	.88	1-6	.97	1-4	1.18
MAXIMUMS FOR PERIOD OF RECORD																
19 58 TO 1962	10-10 1959	1.12	10-10 1959	.71	10-10 1959	1.03	10-10 1959	1.41	10-10 1959	1.51	10-10 1959	1.58	10-10 1959	1.62	10-10 1959	1.91
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Pasture, native grass mixture, usually fair cover, 9%; row crops, mostly corn and tobacco, 13%; small grain, 4%; alfalfa and other hay crops, 5%; farm woods, mixture of hardwoods and conifers, with pine predominating, 58%; idle land, 11%. (Total cultivated, 22%) Conditions are consistent from year to year. 1/ Precipitation Thiessen weighted from rain gages R-1, R-2, and R-3. 2/ Determined from continuous records from Jan. 1958 through Dec. 1962. 3/ Mean P based on 32-yr (1931-62) U. S. Weather Bureau record period at Halifax, Va. (1 mile north).																
Revision to 1960-61 Normal P: The monthly and annual Normals previously published were actually the U.S. Weather Bureau 1956 to 61 Halifax Normals and not averages for 29-yr (1933-61) record period at Halifax, Va., as stated in footnote 2/, of USDA Misc. Pub. 994, p. 77.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK WATERSHED W-I 13.10										
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.73	T	.12	.32	.00	.00	.00	.00	.00	.00	.00	.00				
2	T	T	.00	.00	.03	.14	T	.00	.00	.00	.06S	.00				
3	.00	.00	.00	.00	.00	.03	.50	.71	.00	.00	.98S	.00				
4	.00	.00	.01S	.00	.00	.04	.12	T	.05	.20	.03	.04				
5	.00	.00	.70S	.00	.00	.14	.00	.08	.00	.03	.28	.10				
6	2.17	.00	.21S	.08	.00	.04	.00	.60	.00	T	.00	.01				
7	.00	.00	.07S	.56	.00	.00	.00	.00	.00	.00	.00	.00				
8	.00	.00	.00	1.07	.17	.00	.00	.00	.00	.00	.00	.00				
9	.00	.48	.43S	.00	T	.00	.00	.96	.00	.00	2.77	.00				
10	.26S	.00	.01	T	.00	.00	.00	.00	.00	.00	.00	.00				
11	.00	.00	.46	.32	.47	.00	.00	.00	.00	.00	.00	.00				
12	.00	T	.19	.32	.00	.94	.00	.00	.00	.00	.00	.00				
13	.00	T	.00	.01	.00	.95	.00	.00	.00	.00	.00	.00				
14	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00				
15	.34	.00	.00	.00	.29	.00	.00	.00	.00	.00	.00	.00				
16	.00	.31	.00	.00	.00	.00	.00	.04	1.48	.00	.00	.00				
17	.00	.00	.00	.00	.00	.00	.00	.49	.86	.00	.00	.00				
18	.00	.18	.00	.01	.00	.00	.00	.00	.00	.00	1.23	.00				
19	.04	.62	.03	.00	.00	.21	.00	.00	.00	.00	.00	.00				
20	.03	.00	T	.00	.00	1.42	.00	.00	.02	.00	.06	.00				
21	.00	.17	.80	.00	.00	.01	.04	.73	.00	.11	.78	.27S				
22	.00	.16	.00	.00	.00	.02	.00	.01	.00	.00	.36	.18S				
23	.05	.63	.00	.00	.00	.14	.31	.00	.00	.00	.00	.01				
24	.19	.09	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00				
25	.00	.23	.02	.00	.83	.02	.45	.00	.00	.00	.12S	.74S				
26	.01	.40	.14	.00	1.00	.72	.00	.02	.86	.00	.10	.11				
27	.67S	.01	.00	.00	.04	.00	.00	.15	.32	.00	.00	.00				
28	1.11S	.02	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00				
29	.01	-----	.00	.05	.00	.00	.80	.00	.00	.00	.00	.69S				
30	.00	-----	.00	.01	.00	.03	T	.00	.00	.00	.00	.00				
31	-----	-----	.77	-----	.82	-----	.00	-----	.13	-----	-----	.00				
TOTAL	5.61	3.30	3.96	2.75	4.29	4.92	2.22	3.79	3.59	.47	6.77	2.15				
STA AV	3.40	3.58	3.68	4.16	3.86	3.54	2.96	5.62	3.16	3.32	2.60	3.52				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1, R-2, AND R-3. STA AV IS FOR PERIOD JANUARY 1958 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.10-8.																

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK WATERSHED W-1 13.10						
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.47	3.20	2.86	6.57	1.56	1.87	1.20	.98	.80	.92	.99	1.36
2	1.47	2.79	2.46	3.23	1.51	1.51	1.19	.99	.79	.95	.99	1.38
3	1.44	2.43	2.30	2.43	1.45	1.47	1.59	1.50	.83	.95	1.60	1.44
4	1.71	2.15	2.17	2.20	1.41	1.42	1.48	1.08	.93	1.07	1.07	1.44
5	1.91	1.93	2.36	2.03	1.39	1.42	1.28	1.02	.86	1.02	1.29	1.42
6	51.05	1.72	2.40	2.00	1.36	1.35	1.19	1.93	.79	.98	1.02	1.39
7	8.77	1.56	4.45	2.67	1.36	1.22	1.14	1.11	.80	.95	.99	1.35
8	3.37	1.53	4.42	19.62	1.39	1.20	1.13	1.01	.80	.93	.99	1.32
9	2.30	2.30	4.88	4.91	1.35	1.14	1.10	2.54	.79	.90	17.31	1.28
10	2.05	1.91	6.47	3.17	1.33	1.14	1.01	1.07	.80	.90	6.19	1.23
11	1.68	1.62	8.10	3.71	1.77	1.11	1.01	1.01	.76	.90	1.90	1.19
12	1.60	1.59	14.43	4.17	1.38	1.47	1.01	1.01	.73	.90	1.50	1.19
13	1.45	1.51	4.35	4.24	1.29	3.22	.99	1.01	.73	.90	1.38	1.19
14	1.44	1.48	2.91	3.04	1.29	2.92	.95	1.01	.73	.92	1.29	1.19
15	4.21	1.38	2.27	2.70	1.59	1.53	.98	1.01	.71	.96	1.28	1.19
16	2.71	1.69	2.14	2.28	1.29	1.33	.99	1.01	1.51	.95	1.20	1.19
17	1.88	1.57	1.94	2.09	1.29	1.22	.99	1.42	2.95	.95	1.19	1.19
18	1.66	1.56	1.88	2.02	1.29	1.19	.95	1.02	.98	.92	8.93	1.19
19	1.56	8.94	1.94	1.94	1.29	1.19	.93	1.01	.92	.92	2.70	1.19
20	1.47	3.20	1.94	1.82	1.17	9.29	.90	.95	.90	.92	1.93	1.19
21	1.44	2.66	5.96	1.79	1.14	3.00	.86	1.77	.89	.98	6.70	1.23
22	1.44	3.09	3.35	1.79	1.10	1.71	.83	1.14	.88	.93	8.78	1.39
23	1.38	11.93	2.42	1.72	1.10	1.54	1.01	.95	.86	.98	2.67	1.29
24	1.44	4.75	2.12	1.69	1.08	1.42	.86	.90	.88	.99	1.94	1.19
25	1.44	3.00	1.94	1.69	1.65	1.33	1.17	.90	.89	.99	1.78	1.66
26	1.38	9.79	2.03	1.69	5.04	2.24	.98	.88	1.26	.99	1.65	2.21
27	2.33	4.38	1.85	1.69	2.30	1.45	.93	.99	1.72	.96	1.53	2.12
28	11.48	3.23	1.79	1.69	2.43	1.33	.93	.95	1.02	.92	1.48	1.78
29	4.58	-----	1.79	1.65	1.50	1.31	1.57	.86	.95	.92	1.44	5.44
30	7.42	-----	1.79	1.60	1.38	1.29	1.10	.86	.92	.92	1.44	4.02
31	4.67	-----	3.95	-----	4.33	-----	1.04	.85	-----	1.01	-----	1.71
MEAN	4.33	3.17	3.41	3.13	1.64	1.83	1.07	1.12	.98	.95	2.84	1.60
INCHES	2.17	1.44	1.71	1.52	.82	.89	.54	.56	.48	.48	1.38	.80

NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.016181.

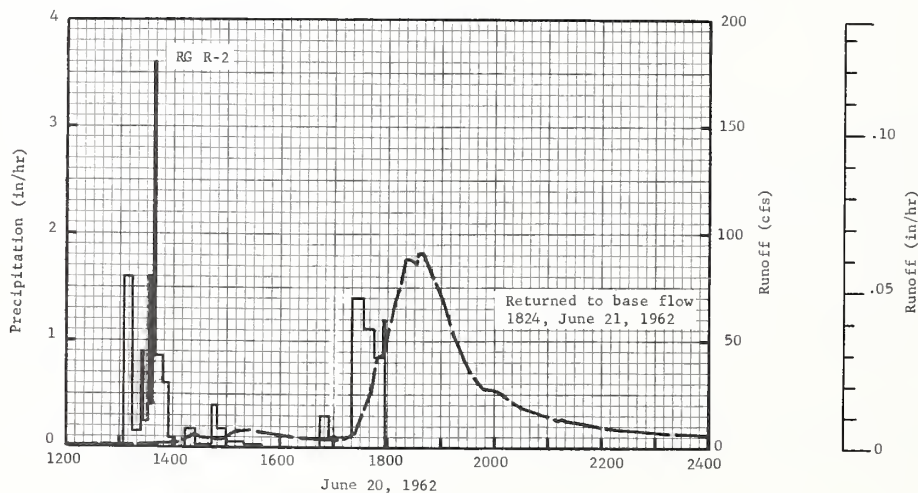
1962 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA LITTLE WINNS CREEK WATERSHED W-1 13.10						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of June 20-21, 1962										
6-20	RG R-2 1/.03	2/.0005	6-20	RG	R-2		6-20			
				1240	.00	.00		0020	1.884	.0000
				1305	.02	.01		0032	1.854	.0003
				1314	1.60	.25		0044	1.869	.0005
				1325	.16	.28		0120	1.661	.0012
				1327	.90	.31		0200	1.587	.0019
				1332	.24	.33		0328	1.335	.0034
				1335	1.60	.41		0428	1.276	.0043
				1338	.40	.43		1200	1.187	.0105
				1340	3.60	.55		1316	1.231	.0116
				1349	.87	.68		1324	1.394	.0117
				1355	.60	.74		1408	2.566	.0127
				1402	.09	.75		1420	5.147	.0132
				1413	.00	.75		1424	6.378	.0134
				1426	.18	.79		1428	5.310	.0137
				1444	.03	.80		1452	4.020	.0150
				1450	.40	.84		1456	4.539	.0152
				1500	.18	.87		1505	6.615	.0157
				1510	.06	.88		1512	7.683	.0163
				1520	.06	.89		1524	8.306	.0174
				1540	.03	.90		1528	8.069	.0177
				1645	.00	.90		1636	4.880	.0227
				1655	.30	.95		1704	4.257	.0241
				1720	.10	.99		1712	4.583	.0245
				1732	1.40	1.27		1724	7.387	.0253
				1745	1.11	1.51		1728	11.332	.0257
				1755	.84	1.65		1740	24.503	.0282
				1757	1.20	1.69		1744	32.113	.0294
								1746	37.764	.0302
								1750	41.680	.0320

Watershed conditions: 58% farm woods, mixture of hardwoods and conifers, with pine predominating, excellent cover; 13% row crops, mostly corn or tobacco, 12 to 18 inches tall; 5% hay crops, mostly alfalfa, 4 to 18 inches tall; 4% small grain, good cover, 18 to 24 inches tall; 9% pasture, good cover of native grasses; 11% idle with a good cover of annual grasses and weeds.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0006742. FOR 30- DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/.02 INCH RAIN, 0031 TO 0045; .01 INCH RAIN, 1000 TO 1034. 2/PRIOR TO 0020.

1962 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				LITTLE WINNS CREEK WATERSHED W-I 13.10				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of June 20-21, 1962--Continued											
6-20	RG R-3 1/.02	.0000	6-20	RG	R-3	R-3	6-20	1756	44.320	.0349	
				1235	.00	.00		1759	46.129	.0364	
				1240	.24	.02		1808	66.168	.0421	
				1255	.00	.02		1812	74.756	.0453	
				1258	.80	.06		1820	87.512	.0526	
				1303	.12	.07		1824	88.165	.0565	
				1320	.14	.11		1832	85.851	.0643	
				1324	1.80	.23		1834	90.479	.0663	
				1327	.80	.27		1840	90.716	.0724	
				1329	1.50	.32		1848	83.181	.0802	
				1337	.75	.42		1903	67.192	.0929	
				1340	.20	.43		1913	53.115	.0997	
				1343	.80	.47		1924	42.762	.1056	
				1345	.30	.48		1932	35.049	.1091	
				1400	.04	.49		1941	30.600	.1124	
				1410	.18	.52		1948	27.633	.1147	
				1433	.08	.55		1952	27.618	.1159	
				1437	.30	.57		1957	27.589	.1175	
				1446	.33	.62		2004	26.150	.1196	
				1513	.11	.67		2012	23.421	.1218	
				1635	.00	.67		2030	18.867	.1261	
				1640	.24	.69		2100	14.773	.1318	
				1713	.04	.71		2112	12.993	.1337	
				1716	.20	.72		2116	13.720	.1343	
				1722	4.00	1.12		2120	12.623	.1348	
				1725	.80	1.16		6-21	2200	9.597	.1398
				1730	.12	1.17			2240	7.535	.1437
				RG	R-1	1.42			2400	5.770	.1497
				3 RG	AVG 2/	1.41			0520	3.649	.1666
									1012	2.922	.1774
									1640	2.077	.1884
									1824	3/ 1.988	.1907

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0006742. 1/ 0040 TO 0100. 2/ THIESSEN WEIGHTED FOR RG R-1, R-2, AND R-3. 3/ NORMAL BASE FLOW.



BLACKSBURG, VIRGINIA LITTLE WINNS CREEK WATERSHED W-I

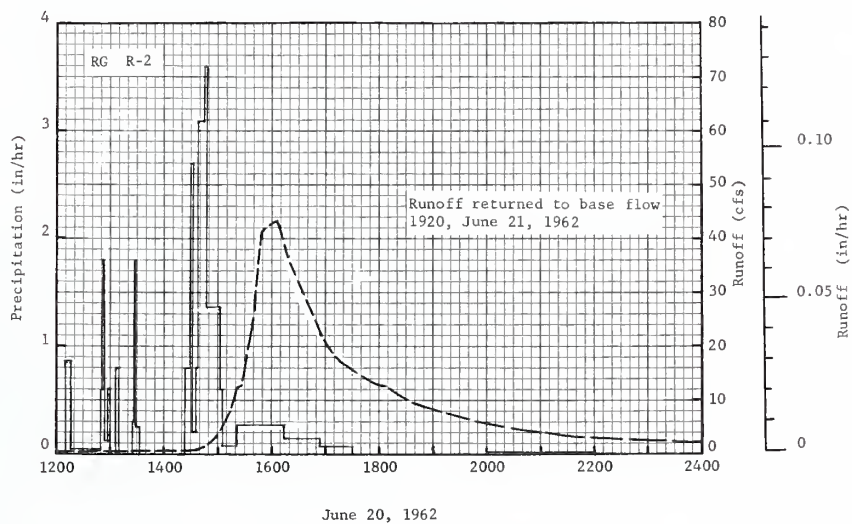
MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA		ROCKY RUN BRANCH WATERSHED W-I 13.11								
						AREA — 555 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{1/}	5.54	3.52	4.61	3.12	3.27	6.93	3.88	1.95	4.69	.52	5.39	2.64	46.06			
Q	1.80	1.50	2.11	1.69	.58	.80	.87	.26	.31	.24	.68	.73	11.57			
STA AV ^{2/} P	3.17	3.76	3.50	3.22	4.72	4.60	4.69	3.49	3.12	3.38	2.64	3.25	43.54			
(58-62) Q	1.18	1.73	1.48	1.36	1.43	1.03	.74	.40	.36	.52	.79	1.04	12.06			
MEAN P ^{3/} /32 YR	3.25	3.36	3.53	3.43	4.06	4.24	6.15	5.04	3.96	2.47	2.91	3.04	45.44			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-20	.08	6-20	.06	6-20	.10	1-6	.21	1-6	.34	1-6	.47	1-6	.56	3-5	1.02
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO	6-7	.22	6-7	.19	5-6	.34	5-6	.71	5-6	.98	5-6	1.45	5-5	2.09	4-30	2.86
19 62	1961		1961		1958		1958		1958		1958		1958		1958	
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Permanent pasture, usually a good cover of native grass and clover mixture, 9%; alfalfa and other hay crops, 6%; corn, 4%; soybeans, usually drilled and cut as forage, 3%; small grain, usually followed by lespedeza, 2%; tobacco, 2%; cotton, 1%; farm woods, a mixture of hardwood and conifer, 54%; idle, usually a good cover of tall weeds, vines, and short growing plants, 18%; road surface, 1%. (Total cultivated, 18%) 1/ Precipitation Thiessen weighted from rain gages R-1 and R-2. 2/ Determined from continuous records from April 1958 through Dec. 1962. 3/ Mean P based on 32-yr (1931-62) U. S. Weather Bureau record period at Emporia (1WNN), Va.																
Revision to 1960-61 Normal P: The monthly and annual Normals previously published were actually the U. S. Weather Bureau 25-yr (1931-55) Normals and not averages for 31-yr (1931-61) record period at Emporia Va., as stated in footnote 2/, of USDA Misc. Pub. 994, p. 85.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA		ROCKY RUN BRANCH WATERSHED W-I 13.11								
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.81	.08	.07	.47	.00	.24	.01	.00	.00	.00	.00	.00				
2	.00	.00	.00	.00	.92	.21	.00	.00	.00	.00	.00	.00				
3	.00	.00	.00	.00	.00	.08	2.21	.37	.10	.00	.88S	.01				
4	.00	.00	.00	.00	.00	.00	.06	.04	.27	.27	.00	.04				
5	.00	.00	.62	.00	.00	.04	T	.00	.22	.00	.19	.16				
6	1.71	.00	.18	.00	.00	.00	.00	.13	.01	.00	.00	.11				
7	.00	.00	.09	.52	.00	.00	.00	.00	.00	.00	.00	.00				
8	.00	.00	.00	1.08	.26	.00	.00	.00	.00	.00	.00	.00				
9	.00	.46	.31	.00	.00	.00	.00	.33	.00	.00	1.79	.00				
10	.31S	.00	.02	.00	.00	.00	.00	T	.87	.00	.07	.00				
11	.00	.00	.54	.39	.24	.00	.00	.00	.00	.00	.00	.00				
12	.00	.12	.31	.05	.03	.92	.00	.00	.00	.00	.00	.00				
13	T	.00	.00	.20	.92	.20	.00	.00	.00	.00	.00	.00				
14	.00	.00	.00	.00	.00	.26	.00	T	.93	.00	.00	.00				
15	.34	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
16	.00	.40	.00	.00	.00	.00	.07	.46	.08	.00	.00	.00				
17	.00	.00	.00	.00	.00	.00	.00	.00	1.09	.00	.00	.00				
18	.00	.09	.00	.00	.00	.00	.22	.00	.00	.00	.92	.00				
19	.04S	.60	.05	.00	.00	.58	.00	.00	.00	.00	.00	.00				
20	.03S	.00	.00	.00	.00	2.08	.00	.00	.00	.00	.13	.02S				
21	.00	.22	1.04	.00	.00	.01	.05	.57	.00	.00	.80	.19S				
22	.00	.23	.02	.00	.00	.00	.00	.01	.00	.00	.23	.37S				
23	.09	.61	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00				
24	.33	T	.00	.00	.45	.39	.00	.00	.00	.00	.00	.01S				
25	.06	.00	.00	.00	.06	.00	.87	.00	.00	.00	.38S	.80S				
26	.23	.63	.21	.00	.18	1.73	.02	.00	.46	.00	.00	.25				
27	.37S	.06	.00	.00	T	.08	.00	.04	.66	.00	.00	.00				
28	1.22S	.02	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00				
29	.00	-----	.00	.41	.09	.00	.32	.00	.00	.00	.00	.68S				
30	.00	-----	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00				
31	.00	-----	1.15	-----	.00	-----	.00	.00	-----	.25	-----	.00				
TOTAL	5.54	3.52	4.61	3.12	3.27	6.93	3.88	1.95	4.69	.52	5.39	2.64				
STA AV	3.17	3.76	3.50	3.22	4.72	4.60	4.69	3.49	3.12	3.38	2.64	3.25				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1 AND R-2. STA AV IS FOR PERIOD APRIL 1958 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.11-8.																

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA							ROCKY RUN BRANCH WATERSHED W-I		13.11
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	1.03	1.40	1.09	4.73	.47	.29	.41	.20	.13	.21	.18	.42			
2	1.14	1.33	.91	1.81	1.02	.29	.35	.18	.12	.20	.17	.39			
3	.83	1.21	.86	1.27	.85	.30	7.34	.26	.16	.18	.36	.38			
4	.74	1.11	.79	1.08	.56	.30	2.62	.22	.20	.23	.22	.39			
5	.63	.95	1.98	.97	.46	.30	1.38	.18	.22	.22	.22	.38			
6	9.28	.79	2.41	.91	.39	.26	.84	.20	.17	.20	.20	.49			
7	3.74	.68	2.60	1.62	.42	.22	.59	.18	.17	.20	.20	.39			
8	1.48	.65	2.46	6.28	.41	.22	.48	.16	.15	.20	.20	.36			
9	.96	1.06	2.88	2.54	.43	.20	.42	.21	.15	.20	1.04	.36			
10	.77	.90	2.68	1.47	.41	.19	.37	.23	.43	.20	1.30	.35			
11	.68	.71	2.32	1.80	.47	.18	.34	.22	.20	.18	.45	.34			
12	.62	.68	6.05	1.49	.42	.34	.32	.20	.15	.17	.35	.33			
13	.60	.65	2.28	1.65	1.24	.32	.30	.21	.13	.17	.31	.32			
14	.60	.63	1.51	1.15	.55	.41	.28	.24	.64	.17	.29	.33			
15	1.30	.58	1.25	1.05	.45	.27	.28	.21	.24	.17	.28	.34			
16	.99	.88	1.06	.93	.41	.22	.28	.30	.21	.17	.28	.34			
17	.73	.85	.90	.85	.37	.21	.26	.22	.77	.17	.28	.34			
18	.65	.68	.86	.78	.35	.18	.25	.19	.29	.17	.99	.34			
19	.60	2.12	.82	.73	.31	.21	.30	.18	.21	.17	.55	.34			
20	.59	1.24	.79	.68	.31	4.72	.25	.17	.19	.16	.47	.34			
21	.53	1.12	2.43	.65	.31	1.05	.21	.25	.18	.15	1.50	.34			
22	.50	1.55	1.68	.62	.28	.46	.20	.21	.18	.15	1.61	.52			
23	.51	3.88	1.18	.59	.27	.34	.20	.18	.19	.15	.74	.47			
24	.63	2.05	1.02	.53	.31	.32	.17	.17	.20	.15	.57	.39			
25	.68	1.25	.95	.55	.31	.31	.39	.17	.20	.15	.61	.92			
26	.89	2.76	1.00	.53	.28	2.42	.27	.16	.22	.15	.71	1.21			
27	.93	1.83	.86	.49	.34	2.23	.20	.18	.53	.16	.54	1.05			
28	2.37	1.33	.79	.46	.30	.81	.18	.18	.27	.17	.48	.74			
29	1.71	-----	.73	.59	.30	.55	.25	.15	.22	.17	.44	1.69			
30	2.96	-----	.68	.56	.28	.50	.24	.14	.21	.17	.42	1.76			
31	2.19	-----	1.52	-----	.26	-----	.22	.13	-----	.20	-----	.72			
MEAN	1.35	1.25	1.59	1.31	.44	.62	.65	.20	.24	.18	.53	.55			
INCHES	1.80	1.50	2.11	1.69	.58	.80	.87	.26	.31	.24	.68	.73			

NOTES:

TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.042886.

1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA			ROCKY RUN BRANCH WATERSHED W-I			13.11
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
			Event of June 20-21, 1962									
			RG R-2									
			1/.56 2/.0202									
			6-20									
			1210 .00 .00									
			1217 .86 .10									
			1250 .04 .12									
			1252 .60 .14									
			1253 1.80 .17									
			1258 .12 .18									
			1300 .60 .20									
			1307 .00 .20									
			1310 .80 .24									
			1325 .00 .24									
			1327 .30 .25									
			1328 1.80 .28									
			1333 .24 .30									
			1424 .00 .30									
			1430 .80 .38									
			1432 2.70 .47									
			1435 .20 .48									
			1438 .80 .52									
			1445 3.09 .88									
			1448 3.60 1.06									
			1503 1.36 1.40									
			1505 .60 1.42									
			1521 .08 1.44									
			1615 .27 1.68									
			1655 .15 1.78									
			1730 .07 1.82									
			2000 .00 1.82									
			2200 .02 1.85									
			RG R-1 1.48									
			2 RG AVG 3/ 1.71									
			6-20									
			1300 .308 .0000									
			1340 .308 .0004									
			1425 .403 .0009									
			1444 1.063 .0013									
			1500 3.492 .0024									
			1512 7.807 .0044									
			1516 9.474 .0054									
			1524 12.547 .0080									
			1528 12.765 .0095									
			1541 27.304 .0173									
			1548 40.640 .0244									
			1608 43.024 .0493									
			1616 37.836 .0589									
			1656 22.083 .0946									
			1716 17.259 .1063									
			1800 12.748 .1260									
			1808 12.743 .1290									
			1844 8.971 .1407									
			2028 4.611 .1617									
			2140 3.442 .1703									
			2320 2.541 .1793									
			2400 2.311 .1822									
			6-21									
			0440 1.483 .1980									
			1220 .879 .2142									
			1600 .649 .2192									
			1920 4/ .548 .2227									



BLACKSBURG, VIRGINIA ROCKY RUN BRANCH WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH WATERSHED W-I 13.12 AREA — 192 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ¹ / _Q	1.92	3.34	4.44	2.73	3.34	3.22	3.32	1.20	4.29	1.36	5.01	3.26	37.43		
		.73	1.13	3.06	.97	.12	.02	.06	.00	.03	T	.36	.12	6.60		
	STA AV ² / _P (58-62) Q	2.36	3.43	3.38	3.43	3.51	3.92	3.52	3.86	3.24	2.47	2.37	2.40	37.89		
		.80	1.98	1.95	1.58	.35	.60	.14	.19	.24	.08	.15	.35	8.41		
MEAN P ³ / _{56 YR}		3.04	2.53	3.14	3.54	3.94	4.12	4.27	4.44	3.44	2.90	2.76	2.89	41.01		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	3-12	.07	3-12	.07	3-12	.13	3-12	.36	3-12	.64	3-12	.97	3-12	1.46	3-10	2.20
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1962	6-24 1958	.48	6-12 1958	.28	6-24 1958	.37	9-19 1960	.69	2-18 1960	.93	2-18 1960	1.17	2-18 1960	1.31	2-18 1961	2.76
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Mixed cover. Permanent pasture with a fair cover of native grass mixture, 30%; hay, a mixture of orchardgrass, clover, or alfalfa, 14%; small grain, 3%; farm woods, predominantly hardwood, 52%; roads, 1%. (Total cultivated, 17%) 1/ Precipitation Thiessen weighted from rain gages R-1 and R-2. 2/ Determined from continuous records from May 1958 through Dec. 1962. 3/ Mean P based on 56-yr (1907-62) U. S. Weather Bureau record period at Culpeper, Va. Monthly records missing for Jan. through July 1907, Nov. 1949, Dec. 1950, and Jan. through Apr., and July 1951.																
Revision to 1960-61 Normal P: The monthly and annual Normals shown previously were actually the U. S. Weather Bureau 25-yr (1931-55) Normals and not averages for 55-yr (1907-61) record period at Culpeper, Va., as stated in footnote 2/, of USDA Misc. Pub. 994, p. 92.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH WATERSHED W-I 13.12										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.03S	.17S	.00	.36	1.06	.00	.00	.00	.01	.00	.00	.00	.00	.00		
2	.00	.01S	.00	.00	.06	.04	.00	.00	1.70	.00	.00	.00	.00	.00		
3	.00	.02	.00	.00	.00	.00	1.30	.40	.32	.05	.50S	.00	.00	.00		
4	.00	.00	.00	.00	.00	.00	.08	.04	.24	.52	.05	.00	.00	.00		
5	.00	.05	.49S	.00	.00	.08	.00	.00	.04	.23	.82S	.12	.00	.00		
6	1.16	.00	1.38S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.65	.00		
7	.05	.00	.12S	.71	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00		
8	.01S	.00	.00	.36	.13	.00	.00	.47	.00	.05	.00	.00	.00	.00		
9	.00	.52S	.06S	.00	.00	.00	.00	.01	.00	.03	1.99	.00	.00	.00		
10	.12S	.00	.00	.00	.00	.00	.00	.01	.00	.00	.13	.00	.00	.00		
11	.00	.06S	.28	.32	.00	.41	.00	.01	.00	.00	.00	.00	.00	.00		
12	.00	.07S	.61	.53	.12	1.17	.00	.01	.00	.00	.00	.00	.00	.00		
13	.00	.05S	.00	.05	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00		
14	.00	.04S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
15	.41	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
16	.00	.23S	.00	.00	.00	.00	.68	.00	.01	.00	.00	.00	.00	.00		
17	.00	.00	.00	.00	.00	.00	.00	.02	.96	.00	.00	.00	.00	.00		
18	.00	.03	.00	.00	.00	.00	.64	.00	.00	.00	.65	.00	.00	.00		
19	.04S	.46	.04	.00	.00	.18	.00	.00	.01	.00	.00	.00	.00	.00		
20	.00	.00	.00	.14	.00	.84	.00	.00	.01	.00	.05	.03S	.00	.00		
21	.00	.03S	.89	.00	.00	.00	.53	.13	.01	.25	.75	.68S	.00	.00		
22	.10	.00	.03	.00	.00	.00	.00	.00	.00	.00	.07	.17S	.00	.00		
23	.00	.10	.00	.00	.00	.26	.00	.00	.42	.00	.00	.00	.00	.00		
24	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
25	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.65S	.00	.00		
26	.00	.74	.00	.00	1.57	.00	.00	.00	.14	.00	.00	.01S	.00	.00		
27	.00	.57	.00	.00	.01	.00	.00	.00	.42	.00	.00	.00	.00	.00		
28	.00	.17	.00	.00	.21	.00	.00	.00	.00	.00	.00	.00	.00	.00		
29	.00	-----	.00	.25	.01	.00	.00	.00	.00	.00	.00	.95S	.00	.00		
30	.00	-----	.00	.01	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00		
31	.00	-----	.54	-----	.17	-----	.00	.00	-----	.17	-----	.00	.00	.00		
TOTAL	1.92	3.34	4.44	2.73	3.34	3.22	3.32	1.20	4.29	1.36	5.01	3.26				
STA AV	2.36	3.43	3.38	3.43	3.51	3.92	3.52	3.86	3.24	2.47	2.37	2.40				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1 AND R-2. STA AV IS FOR PERIOD MAY 1958 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.12-7.																

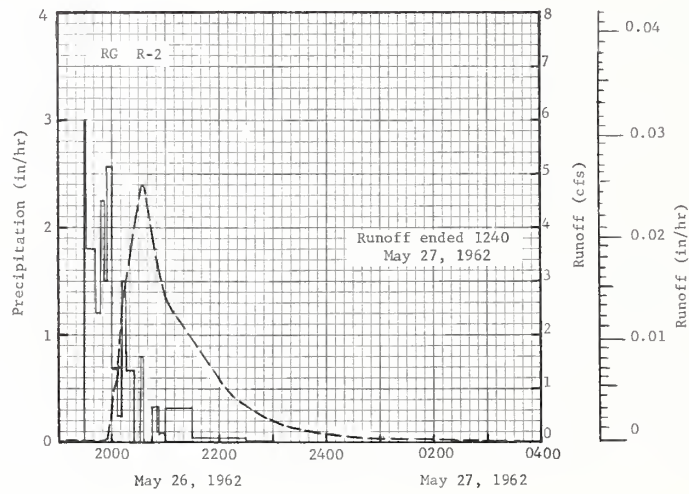
1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH WATERSHED W-I 13.12						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.03	.03	.48	.83	.19	.00	.00	.00	.00	.00	.00	T
2	.03	.02	.25	.23	.30	.00	.00	.00	.15	.00	.00	T
3	.03	.02	.17	.14	.07	.00	.05	.00	.04	.00	.00	T
4	.10	.02	.14	.10	.03	.00	.01	.00	T	.02	.00	T
5	.05	.01	.08	.08	.01	.00	.00	.00	.00	T	.08	T
6	2.21	.01	.15	.06	.01	.00	.00	.00	.00	T	.01	.33
7	.95	.01	.21	.48	T	.00	.00	.00	.00	.00	T	.05
8	.35	.01	.25	1.62	.01	.00	.00	.00	.00	.00	.00	.03
9	.17	.01	.27	.37	T	.00	.00	.00	.00	.00	.55	.02
10	.11	.01	.37	.25	T	.00	.00	.00	.00	.00	.61	.01
11	.12	.01	.91	.41	T	.00	.00	.00	.00	.00	.03	.01
12	.05	.01	7.84	1.13	T	.10	.00	.00	.00	.00	.02	T
13	.05	.01	3.92	.90	T	.03	.00	.00	.00	.00	.01	T
14	.12	.15	2.10	.38	.00	T	.00	.00	.00	.00	T	T
15	.58	.10	1.25	.23	.00	.00	.00	.00	.00	.00	T	T
16	.25	.23	.81	.15	.00	.00	.01	.00	.00	.00	T	.00
17	.13	.17	.50	.11	.00	.00	.00	.00	.01	.00	T	.00
18	.08	.12	.33	.08	.00	.00	.20	.00	.00	.00	.20	T
19	.06	1.10	.26	.06	.00	.00	.00	.00	.00	.00	.05	T
20	.06	.50	.20	.07	.00	.06	.00	.00	.00	.00	.04	T
21	.05	.33	1.99	.05	.00	T	.18	.00	.00	.00	.52	T
22	.09	.30	.85	.03	.00	.00	.00	.00	.00	.00	.51	T
23	.06	.31	.43	.02	.00	.00	.00	.00	.00	.00	.11	T
24	.04	.29	.27	.02	.00	.00	.00	.00	.00	.00	.05	T
25	.03	.15	.18	.01	.00	.00	.00	.00	.00	.00	.03	T
26	.03	1.67	.13	.01	.30	.00	.00	.00	.00	.00	.02	T
27	.02	2.43	.09	T	.01	.00	.00	.00	.01	.00	.01	T
28	.02	1.10	.06	T	.01	.00	.00	.00	.00	.00	.01	T
29	.02	-----	.04	.01	.00	.00	.00	.00	.00	.00	.01	.02
30	.02	-----	.03	T	.00	.00	.00	.00	.00	.00	T	.27
31	.02	-----	.13	-----	.00	-----	.00	.00	-----	.00	-----	.19
MEAN	.19	.32	.80	.26	.03	.01	.01	.00	.01	T	.10	.03
INCHES	.73	1.13	3.06	.97	.12	.02	.06	.00	.03	T	.36	.12

NOTES:

TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.123967.

1962 SELECTED RUNOFF EVENT							BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH WATERSHED W-I 13.12				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of May 26-27, 1962											
5-26	RG R-2 .00	1/.0040	5-26	RG	R-2		5-26	1956	.076	.0000	
				1930	.00	.00		2000	.428	.0001	
				1932	3.00	.10		2002	1.011	.0002	
				1942	1.80	.40		2004	1.115	.0004	
				1947	1.20	.50					
				1951	2.25	.65		2012	2.712	.0017	
				1953	1.50	.70		2032	4.778	.0082	
				2000	2.57	1.00		2036	4.710	.0098	
				2007	.69	1.08		2100	2.660	.0174	
				2012	.24	1.10		2120	2.188	.0216	
				2016	1.50	1.20		2212	.927	.0286	
				2025	.67	1.30		2300	.403	.0313	
				2032	.00	1.30		2340	.207	.0324	
				2035	.80	1.34		2400	.161	.0327	
				2045	.00	1.34		5-27			
Watershed conditions: 52% farm woods, predominantly hardwoods, good cover; 30% permanent pasture, good cover of grass mixture; 14% hay mixture of orchard grass and clover or alfalfa, good cover; 3% small grain 3 to 6 in. tall; 1% roads.							0040	.085	.0331		
							0220	.023	.0336		
							0332	.017	.0337		
							0620	.006	.0339		
							1220	2/.002	.0340		
							RG	R-1	1.56		
							2 RG	AVG 3/	1.57		

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00516531. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ PRIOR TO 1956. 2/ RUNOFF ENDED AT 1240, MAY 27, 1962. 3/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.



BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA							CHUB RUN WATERSHED W-I	13.13
						AREA — 2,023 ACRES (3.16 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/	1.90	2.61	5.61	3.38	3.88	6.91	2.39	1.43	1.75	2.61	6.03	3.13	41.63
	Q	.90	.50	2.83	1.39	.85	1.69	.50	.15	.12	.15	1.29	.69	11.06
STA AVG (59-62)	P	1.85	4.49	3.69	3.62	4.56	4.89	2.93	3.08	2.60	2.59	2.47	2.47	39.24
	Q	.66	1.35	1.96	2.01	1.16	.95	.33	.16	.14	.35	.53	.50	10.10
MEAN P 3/ 22 YR		2.43	2.24	3.24	2.91	3.89	3.62	4.13	4.74	3.33	3.56	2.67	2.68	39.44
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS														
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL											
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-19	.09	6-19	.09	6-19	.16	11-9	.26	6-20	.39	6-20	.52	6-19	.90
													6-19	1.29
MAXIMUMS FOR PERIOD OF RECORD														
1959 TO 1962	9-30 1959	.24	9-30 1959	.17	9-30 1959	.24	9-30 1959	.34	9-30 1959	.40	6-20 1962	.52	6-19 1962	.90
													3-29 1960	1.58
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Mixed cover: Permanent pasture, a fair cover of native grass, 30%; hay mixtures such as alfalfa, orchardgrass, lespedeza and clover, 5%; corn, 2%; small grain, 1%; farm woods, predominately hardwood mixed with conifer, 57%; idle, 4%; road surface, 1%. (Total cultivated, 8%)														
1/ Precipitation Thiessen weighted from R-1, R-2, and R-3. 2/ Determined from continuous records from September 1959 through 1962. 3/ Mean P based on 22-yr (1941-62) U.S. Weather Bureau record period at Luray, Va. (5E). Missing monthly totals for Jan. and Feb. 1941 were estimated from nearby Weather Bureau records at Riverton, Va.														
Revision to 1960-61 Normal P: The monthly and annual Normals previously published in USDA Misc. Pub. 994, p. 99, were based on Weather Bureau 1942-59 records at Luray, Va. combined with 1960 and 61 data from the Chub Run Watershed W-I.														
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA							CHUB RUN WATERSHED W-I	13.13
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.09S	.00	.50	1.07	.00	.00	.00	.00	.00	.00	.00		
2	.00	.01	.00	.00	.04	.00	T	.00	1.01	.00	.00	.00		
3	.00	.00	.00	.00	.00	.12	.77	.17	.00	.00	.25N	.00		
4	.00	.00	.00	.00	.00	.00	.17	.00	.08	1.42	.27	.00		
5	.00	.15	1.25S	.00	.00	.44	T	.00	.00	.01	.17	.41		
6	1.16S	.00	1.29S	.06	.00	.00	.00	.00	.00	.00	.00	.66		
7	.06	.00	.45S	.48	.00	.00	.00	.00	.00	.00	.00	.00		
8	.05S	.00	.00	.38	.11	.00	.51	.66	.00	.26	.00	.00		
9	.00	.23S	.08S	.04	.00	.00	.00	.10	.00	.00	3.47	.00		
10	.09S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.00		
11	.00	.12S	.34	.31	.00	.36	.00	.00	.00	.00	.00	.00		
12	.00	.08S	.52	.38	.23	.87	.01	.00	.00	.00	.00	.00		
13	.00	.05S	.00	.07	.20	.17	.00	.13	.00	.00	.00	.00		
14	.00	.01	.00	.00	.00	.67	.01	.00	.00	.00	.00	.00		
15	.35	.00	.00	.00	.06	T	.09	.00	.00	.00	.00	.00		
16	.00	.21M	.00	.00	.00	.00	.40	.06	.00	.00	.02	.00		
17	.00	.00	.00	.00	.00	.00	.00	.16	.00	.00	.01	.00		
18	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.90	.00		
19	.05S	.30	.04S	T	.40	2.28	.00	.05	.00	.00	.00	.00		
20	.00	.00	.00	.34	.29	1.86	.00	.00	.00	.00	.00	.07S		
21	.00	TS	.88	.00	.00	.00	.16	.31	.00	.02	.69	.68S		
22	.08	.00	.17	.00	.00	.00	.01	.00	.01	.00	.05	.03S		
23	.03	.16	.00	.00	.00	.14	.06	.00	.18	.00	.00	.00		
24	.00	.02	.00	.00	T	.00	.00	.00	.00	.00	.00	.03S		
25	.00	.00	.00	.00	.00	.00	.07	.00	T	.00	.00	.55S		
26	.03	.61	.00	.00	1.07	.00	.00	.00	.10	.00	.00	.00		
27	.00	.45	.00	.00	.02	.00	.00	.00	.16	.00	.00	.00		
28	.00	.14	.00	.00	.39	.00	.00	.00	.00	.00	.00	.00		
29	.00	-----	.00	.82	.00	.00	.12	.00	.00	.00	.00	.70M		
30	.00	-----	.00	T	.00	.00	.00	T	.00	.62	.00	.00		
31	.00	-----	.59	-----	.00	-----	.00	.00	-----	.28	-----	.00		
TOTAL	1.90	2.61	5.61	3.38	3.88	6.91	2.39	1.43	1.75	2.61	6.03	3.13		
STA AV	1.85	4.49	3.69	3.62	4.56	4.89	2.93	3.08	2.60	2.59	2.47	2.47		
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1, R-2 AND R-3. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994 P. 13.13-5														

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA						CHUB RUN WATERSHED W-I		13.13
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	1.49	1.18	3.96	7.73	3.28	1.45	2.06	.55	.20	.31	.49	1.45		
2	1.45	1.12	3.35	5.63	5.26	1.31	1.94	.55	.82	.29	.45	1.39		
3	1.63	1.08	2.98	5.06	3.86	1.24	2.86	.53	.59	.29	.75	1.35		
4	1.80	1.08	2.63	4.59	3.61	1.20	2.69	.49	.47	1.69	.75	1.29		
5	1.69	1.04	2.47	4.24	3.24	1.33	2.18	.47	.43	.69	.73	1.31		
6	6.51	1.00	2.47	3.98	2.98	1.29	1.92	.41	.37	.47	.59	3.79		
7	7.51	.98	2.47	4.81	2.77	1.06	1.73	.41	.35	.43	.51	2.37		
8	4.83	.98	2.47	4.90	2.63	.94	1.94	.71	.35	.55	.49	2.12		
9	3.73	.98	2.47	4.51	2.47	.94	1.88	.71	.35	.43	14.63	2.02		
10	3.04	1.16	2.47	4.02	2.39	.86	1.51	.55	.35	.37	22.36	1.90		
11	2.39	.98	2.65	4.65	2.20	.94	1.41	.51	.29	.33	6.53	1.90		
12	2.86	1.14	15.34	5.12	2.14	1.92	1.37	.47	.24	.33	4.94	1.90		
13	2.59	.98	16.28	5.75	2.39	1.63	1.29	.53	.24	.33	3.69	2.12		
14	2.55	1.12	11.77	4.83	2.04	2.10	1.22	.51	.24	.33	2.57	2.79		
15	3.67	1.08	9.32	4.45	1.86	2.26	1.26	.45	.24	.33	2.10	2.33		
16	2.82	1.16	9.59	4.06	1.69	1.59	1.65	.43	.29	.33	1.86	1.73		
17	2.33	1.08	9.97	3.77	1.59	1.35	1.41	.37	.35	.31	1.69	1.29		
18	2.16	.98	11.18	3.49	1.53	1.18	1.26	.33	.29	.31	4.77	1.29		
19	2.10	1.73	8.77	3.20	1.71	25.93	1.14	.33	.24	.31	4.16	1.29		
20	1.96	1.51	9.93	3.57	2.06	40.72	1.02	.29	.29	.29	3.63	1.29		
21	1.90	1.35	24.07	3.16	1.65	15.75	.98	.33	.27	.29	4.81	2.10		
22	2.02	1.24	18.79	2.90	1.45	7.89	.96	.45	.24	.31	5.94	2.12		
23	1.90	1.26	13.52	2.71	1.35	6.02	.90	.29	.35	.31	4.37	1.39		
24	1.75	1.53	10.20	2.55	1.31	4.77	.86	.27	.33	.31	3.81	1.31		
25	1.69	1.35	8.34	2.47	1.20	3.88	.86	.27	.31	.29	3.41	1.26		
26	1.63	2.90	7.10	2.39	3.08	3.43	.75	.27	.35	.27	2.41	2.06		
27	1.57	5.02	6.18	2.18	2.53	3.04	.67	.27	.47	.27	2.04	1.43		
28	1.41	5.14	5.53	2.04	2.47	2.63	1.24	.27	.39	.27	1.82	1.18		
29	1.29	-----	4.96	2.63	1.94	2.49	.69	.27	.31	.31	1.65	1.75		
30	1.24	-----	4.53	2.86	1.73	2.28	.65	.22	.31	.43	1.51	2.45		
31	1.18	-----	4.85	-----	1.57	-----	.59	.22	-----	1.04	-----	4.32		
MEAN	2.47	1.51	7.76	3.94	2.32	4.78	1.38	.41	.34	.41	3.65	1.88		
INCHES	.90	.50	2.83	1.39	.85	1.69	.50	.15	.12	.15	1.29	.69		

NOTES:

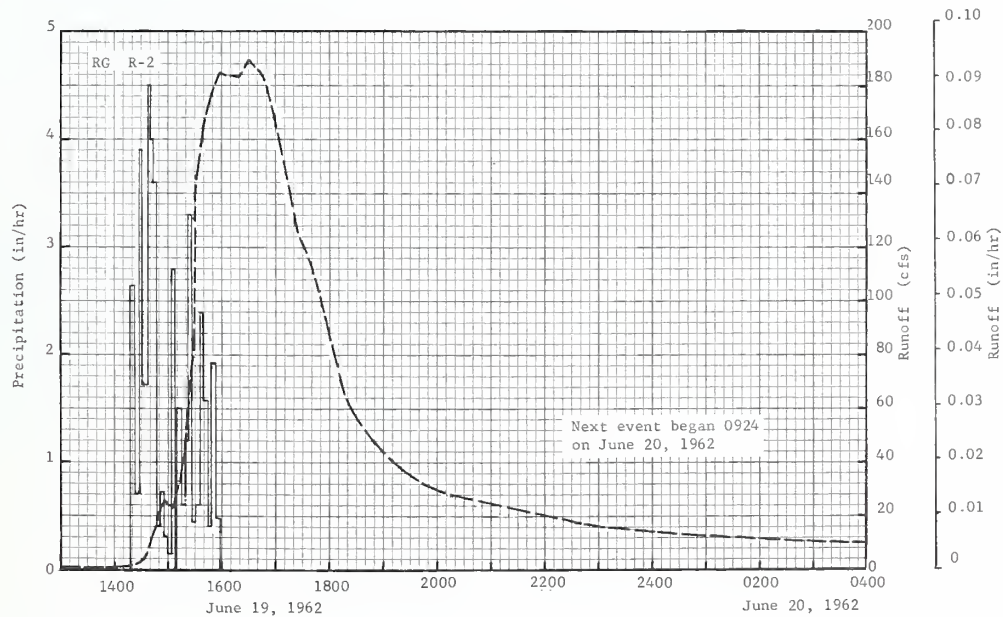
TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.011766.

1962 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA				CHUB RUN WATERSHED W-I				13.13	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
6-19	RG R-2 .00	1/.0081	6-19	Event of June 19-20, 1962			6-19						
				RG	R-2								
				1418	.00	.00					1412	1.000	.0000
				1423	2.64	.22					1420	1.265	.0001
				1429	.70	.29					1423	1.775	.0001
				1431	3.90	.42					1424	2.407	.0001
				1438	1.71	.62					1426	2.733	.0002
				1440	4.50	.77					1432	3.733	.0003
				1443	4.00	.97					1436	4.834	.0005
				1448	3.60	1.27					1443	13.524	.0010
				1451	.40	1.29					1448	16.013	.0016
				1456	.72	1.35					1456	25.437	.0030
				1500	.30	1.37					1504	23.520	.0046
				1504	.15	1.38					1512	33.148	.0064
				1507	2.80	1.52					1519	44.102	.0086
				1509	.00	1.52					1524	70.436	.0110
				1515	1.50	1.67					1528	83.022	.0135
				1519	.60	1.71					1530	139.669	.0153
				1522	1.20	1.77					1540	165.718	.0278
1526	3.30	1.99	1550	176.448	.0417								
1530	.45	2.02	1600	185.627	.0565								
1537	.60	2.09	1620	183.934	.0867								
1539	2.40	2.17	1632	189.952	.1050								
1544	1.56	2.30	1644	184.791	.1234								
1547	.40	2.32	1700	166.922	.1464								
1552	1.92	2.48	1724	127.532	.1753								
1557	.48	2.52	1740	112.233	.1909								
Watershed conditions: 57% woods, predominantly hardwood mixed with conifer, good cover; 30% permanent pasture, a fair cover of native grass and clovers; 1% in small grain 20 to 30 inches high; 2% corn 18 to 30 inches high; 5% hay mixtures of alfalfa, orchard-grass, lespedeza, and clover; 4% idle with good cover of annual grasses and weeds; 1% in roads.													

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004902. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ PRIOR TO 1412.

1962 SELECTED RUNOFF EVENTS			BLACKSBURG, VIRGINIA				CHUB RUN WATERSHED W-I				13.13
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of June 19-20, 1962—Continued											
6-19	RG R-3 .00	.0000	6-19	RG	R-3		6-19	1800	88.530	.2073	
				1405	.00	.00		1813	68.641	.2157	
				1410	.60	.05		1836	54.301	.2272	
				1414	6.30	.47		1918	38.043	.2431	
				1421	4.11	.95					
				1429	.30	.99		1958	30.700	.2543	
				1432	1.20	1.05		2240	17.584	.2863	
								2400	14.973	.2969	
				1436	7.05	1.52	6-20				
				1438	.90	1.55		0240	11.403	.3142	
				1440	2.10	1.62					
				1443	1.00	1.67		0640	8.996	.3342	
				1446	2.80	1.81		0820	8.629	.3414	
								0900	<u>1/</u> 8.649	.3442	
				1450	.45	1.84					
				1453	2.60	1.97					
				1500	.34	2.01					
				1535	.05	2.04					
				1542	.51	2.10					
				1600	.17	2.15					
				RG	R-1	2.17					
				3 RG	AVG <u>2/</u>	2.27					

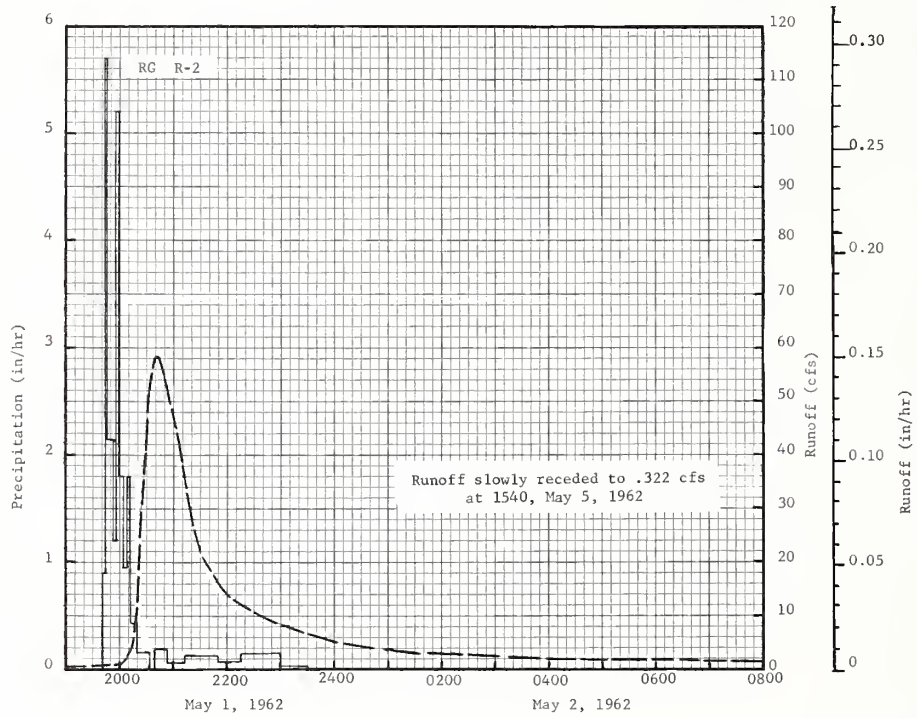
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004902. 1/ NEXT RUNOFF EVENT BEGAN AT 0924 ON JUNE 20, 1962. 2/ THIESSEN WEIGHTED FOR RG R-1, R-2, AND R-3.



BLACKSBURG, VIRGINIA CHUB RUN WATERSHED W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA AREA — 389 ACRES		FOSTERS CREEK WATERSHED W-I 13.14								
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P1/ Q	2.34 1.34	3.61 1.45	3.92 3.98	2.78 1.35	3.60 .85	3.41 .55	4.46 .61	1.72 .22	3.47 .20	1.27 .19	4.49 .64	3.29 .45	38.36 11.83			
STA AV2/P (60-62) Q	2.19 1.18	4.44 3.01	4.35 2.93	3.02 1.76	4.39 1.23	3.52 .52	3.17 .42	3.42 .26	3.38 .19	4.71 2.45	2.44 .46	3.40 .76	42.43 15.17			
MEAN P3/ 47 YR	3.32	2.81	3.59	3.47	3.51	3.57	4.66	4.32	3.23	2.89	2.69	3.00	41.06			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	5-1	.15	3-12	.14	3-12	.28	3-12	.75	3-12	1.38	3-11	2.20	3-11	2.39	3-7	2.81
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1962	10-20 1961	1.71	10-20 1961	.76	10-20 1961	1.02	10-20 1961	2.06	10-20 1961	3.02	10-20 1961	4.96	10-20 1961	5.89	10-20 1961	5.96
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Permanent pasture, usually a good cover of native grass and clover mixture, 26%; hay mixture, such as alfalfa, orchardgrass, lespedeza, and other clover, 12%; small grain and corn, 3%; farm woods, predominantly hardwood, 46%; idle land, usually in tall weeds, brush, and native grass, 11%; road surface, 2%. (Total cultivated, 15%) 1/ Precipitation Thiessen weighted from rain gages R-1 and R-2. 2/ Determined from continuous records from Sept. 1960 through Dec. 1962; precipitation Thiessen weighted. 3/ Mean P based on 47-yr (1916-62) U. S. Weather Bureau record period at Louisa, Va. Records at Mineral, Va. utilized to 1940. During change-over, months of Jan. and Feb. 1940 and Mar., Oct., Nov., and Dec. 1940, had missing records.																
Revision to 1960-61 Normal P: The monthly and annual Normals previously published were actually the U.S. Weather Bureau Normals shown by them for Mineral, Va. (1936-40) and for Louisa, Va. (1941-55) and not the averages for the 40-yr (1926-61) record period for Louisa, Va. as stated in footnote 2/ of USDA Misc. Pub. 994, p. 104.																
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA FOSTERS CREEK WATERSHED W-I 13.14										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.17S	.20S	.05S	.29	1.44	.00	.02	.05	.00	.00	.00	.00				
2	.00	.00	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00				
3	.00	.00	.00	.00	.00	.00	2.45	.47	.58	.01	.52S	.00				
4	.00	.00	.00	.00	.00	.00	.35	.32	.09	.51	.04	.00				
5	.02	.05	.74S	.00	.00	.31	.00	.00	.20	.46	.69	.16				
6	1.09	.00	.65S	.06	.00	.00	.00	.08	.00	.00	.00	.55				
7	.00	.00	.04S	.50	.00	.00	.00	.00	.00	.00	.00	.00				
8	.00	.05S	.00	.68	.36	.00	.00	.27	.00	.00	.00	.00				
9	.00	.70S	.14S	.00	.00	.00	.00	.06	.00	.00	2.12	.00				
10	.19S	.00	.00	.00	.00	.00	.00	.00	.23	.00	.05	.00				
11	.00	.01S	.42	.54	.00	1.80	.00	.00	.00	.00	.00	.05				
12	.00	.12S	.27	.28	.11	.22	.00	.00	.00	.00	.00	.00				
13	.00	.05S	.00	.01	.34	.47	.00	.00	.00	.00	.00	.00				
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
15	.40	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00	.00				
16	.00	.34S	.00	.00	.00	.00	.64	.00	.07	.00	.80	.00				
17	.00	.00	.00	.00	.00	.00	.00	.00	1.03	.00	.00	.00				
18	.00	.05	.00	.00	.00	.00	.03	.00	.00	.00	.69	.00				
19	.06S	.47	.06S	.00	.08	.35	.00	.00	.02	.00	.00	.00				
20	.00	.00	.00	.05	.00	.25	.00	.00	.12	.00	.06	.05S				
21	.00	.08S	1.03	.00	.00	.01	.22	.47	.00	.04	.25	.84S				
22	.13	.01	.01	.00	.00	.00	.00	.00	.00	.00	.07	.20S				
23	.00	.14	.00	.00	.26	.00	.05	.00	.20	.00	.00	.00				
24	.00	.02	.00	.00	.12	.00	.00	.00	.00	.00	.00	.03S				
25	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.60S				
26	.01	.80	.00	.00	.40	.00	.00	.00	.11	.00	.00	.05				
27	.07S	.17	.00	.00	.00	.00	.00	.00	.39	.00	.00	.00				
28	.20S	.35	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00				
29	.00	-----	.00	.34	.04	.00	.09	.00	.00	.00	.00	.76S				
30	.00	-----	.00	.03	.00	.00	.00	.00	.00	.01	.00	.00				
31	.00	-----	.51	-----	.36	-----	.00	.00	-----	.24	-----	.00				
TOTAL	2.34	3.61	3.92	2.78	3.60	3.41	4.46	1.72	3.47	1.27	4.49	3.29				
STA AV	2.19	4.44	4.35	3.02	4.39	3.52	3.17	3.42	3.38	4.71	2.44	3.40				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1 AND R-2. STA AV IS FOR PERIOD SEPTEMBER 1960 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, MISC. PUB. 994, P. 13.14-4.																

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA		FOSTERS CREEK WATERSHED W-I						13.14	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.40	.53	1.66	1.57	3.52	.26	.16	.13	.05	.09	.11	.17			
2	.41	.47	.73	.69	1.59	.22	.14	.11	.10	.09	.11	.17			
3	.39	.42	.63	.53	.57	.22	2.67	.22	.21	.09	.20	.17			
4	.66	.42	.58	.48	.39	.21	1.66	.25	.12	.19	.13	.17			
5	.63	.42	.54	.46	.34	.27	.36	.18	.13	.33	.40	.18			
6	5.27	.42	.75	.46	.31	.22	.24	.17	.11	.11	.17	.70			
7	1.66	.36	.92	1.19	.28	.18	.21	.15	.09	.11	.13	.23			
8	.72	.32	1.08	3.21	.41	.17	.19	.15	.09	.11	.13	.19			
9	.53	1.27	1.10	1.03	.36	.16	.18	.16	.08	.10	2.69	.19			
10	.44	.97	1.56	.62	.32	.16	.16	.14	.12	.09	1.92	.16			
11	.42	.55	4.00	1.79	.31	.86	.15	.14	.09	.09	.25	.17			
12	.42	.50	34.84	1.49	.31	1.33	.15	.13	.07	.09	.18	.17			
13	.42	.50	1.61	1.12	.59	1.14	.15	.15	.07	.09	.17	.17			
14	.42	.61	.84	.66	.35	.37	.14	.09	.07	.09	.15	.17			
15	1.68	.48	.73	.56	.31	.27	.24	.09	.06	.10	.15	.16			
16	.76	.44	.65	.51	.27	.22	.61	.09	.07	.09	.15	.15			
17	.50	.75	.58	.48	.27	.20	.24	.09	.36	.09	.15	.16			
18	.44	.62	.55	.47	.25	.19	.20	.09	.10	.08	.64	.17			
19	.42	2.59	.54	.46	.22	.23	.18	.09	.09	.08	.29	.17			
20	.42	.84	.53	.43	.22	.29	.16	.07	.10	.08	.22	.17			
21	.42	.61	3.79	.42	.22	.23	.17	.15	.08	.08	.24	.19			
22	.55	.60	1.53	.42	.20	.20	.17	.09	.08	.08	.42	.29			
23	.49	.62	.86	.40	.22	.18	.16	.08	.11	.08	.20	.29			
24	.42	.63	.65	.38	.33	.18	.15	.07	.09	.08	.18	.23			
25	.38	.51	.58	.36	.21	.18	.13	.07	.09	.08	.17	.22			
26	.34	4.01	.53	.35	.22	.16	.13	.06	.10	.08	.17	.22			
27	.42	1.71	.48	.33	.26	.16	.14	.07	.19	.08	.17	.22			
28	.38	1.58	.46	.33	.25	.16	.15	.06	.11	.08	.17	.22			
29	.34	-----	.46	.48	.25	.16	.18	.05	.09	.11	.17	.60			
30	.57	-----	.46	.41	.23	.16	.18	.05	.09	.11	.17	.61			
31	.53	-----	.83	-----	.35	-----	.15	.05	-----	.14	-----	.27			
MEAN	.70	.85	2.10	.74	.45	.30	.32	.11	.11	.10	.35	.24			
INCHES	1.34	1.45	3.98	1.35	.85	.55	.61	.22	.20	.19	.64	.45			
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.061187															
1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA FOSTERS CREEK WATERSHED W-I						13.14			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF								
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)					
5 -1	RC R-2 .00	1/.0172	5 -1	Event of May 1-2, 1962			5 -1	1940							
				RC R-2											
				1940 .00 .00									1948	.322	.0000
				1944 .90 .06											
				1946 5.70 .25											
				1953 2.14 .50											
				1956 1.20 .56									2015	4.275	.0019
				1959 5.20 .82											
				2003 1.80 .94											
				2008 .96 1.02											
				2012 1.80 1.14									2028	38.675	.0133
				2019 .43 1.19											
				2034 .16 1.23											
				2038 .00 1.23											
				2054 .19 1.28									2040	58.291	.0396
				2113 .06 1.30											
				2150 .13 1.38											
				2215 .07 1.41											
				2300 .15 1.52									2112	36.369	.1066
				2330 .02 1.53											
			2130	22.017	.1284										
			2158	14.572	.1502										
			2212	12.689	.1583										
			2308	8.088	.1830										
			2400	5.582	.1981										
			5 -2												



BLACKSBURG, VIRGINIA FOSTERS CREEK WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA AREA— 1,058 ACRES (1.65 SQ. MILES)										CHESTNUT BRANCH WATERSHED W-I 13.15	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P ¹ / ₂	3.34	3.89	4.81	2.79	3.41	6.82	3.82	1.59	2.82	1.63	5.70	3.04	43.66			
	Q	1.41	1.50	2.73	1.49	.75	1.41	.64	.33	.26	.33	1.04	.69	12.58			
STA AV ² / ₂ P	(60-62)	2.21	4.92	4.47	3.07	2.78	5.78	3.47	3.10	3.75	2.78	3.53	3.50	43.36			
	Q	.99	1.82	2.07	1.44	.70	.97	.52	.41	.41	.54	.89	1.07	11.83			
MEAN P ³ / ₃₂ YR		3.38	3.03	4.13	3.47	4.00	4.62	4.55	5.11	3.37	2.99	3.00	3.43	45.08			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	6-13	.23	6-13	.15	11-9	.18	11-9	.31	3-11	.43	3-11	.60	3-11	.75	3-7	1.25	
MAXIMUMS FOR PERIOD OF RECORD																	
1960 TO 1962	11-6 1961	.26	11-6 1961	.19	11-6 1961	.27	11-6 1961	.35	3-11 1962	.43	3-11 1962	.60	3-11 1962	.75	2-18 1961	1.42	
Notes: Quality of records: P - excellent; Q - good. Watershed conditions: Mixed cover: Pasture, usually good cover of native grass mixture, 24.7%; hay mixtures, such as alfalfa, red clover, lespedeza, and native grass, 25.8%; corn, 5.6%; small grain followed by lespedeza, 0.6%; tobacco, 0.4%; farm woods, a mixture of hardwood and pine, 35.6%; idle land with good cover of weeds and annual grasses, 6.4%; roads, 0.9%. (Total cultivated, 32.4%) 1/ Precipitation Thiessen weighted from rain gages R-1, R-2, and R-3. 2/ Determined from continuous records from Sept. 1960 through Dec. 1962; precipitation Thiessen weighted. 3/ Mean P based on 32-yr (1931-62) U.S. Weather Bureau record period at Bedford, Va. Missing totals for 16 months were estimated from nearby Weather Bureau records at Lynchburg, Va. (Airport).																	
Revision to 1960-61 Normal P: The monthly and annual Normals previously published were actually the U.S. Weather Bureau 25-yr (1931-55) Normals, and not averages for the 47-yr (1915-61) record period at Bedford, Va., as stated in footnote 2/ of USDA Misc. Pub. 994, p. 108.																	
1962 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA CHESTNUT BRANCH WATERSHED W-I 13.15											
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC					
1	.21S	.09S	.02	.26	.67	.00	.26	.00	.00	.00	.00	.00					
2	.00	.00	.00	.00	.26	.00	.01	.00	T	.00	.00	.00					
3	.00	.00	.00	.00	.00	.00	.77	.77	.00	.05	.68S	.01					
4	.00	.00	T	.00	.00	.00	.45	.00	.26	1.32	.03	.00					
5	.04	.00	.65S	.00	.00	1.34	.00	.11	.00	.01	.62	.32					
6	1.23	.00	.17S	.29	.00	T	.00	.00	.00	.00	.00	T					
7	.00	.00	T	.91	.00	.00	.00	.00	.00	.00	.00	.00					
8	.04S	.00	.00	.58	.04	.00	.33	.27	.00	.00	.00	.00					
9	.02S	.97S	.61S	.00	.00	.00	.00	.00	T	.00	2.93	.00					
10	.08S	.00	T	.00	.00	.00	.00	.00	.37	.00	.06	.00					
11	.00	.00	.74	.28	.24	1.27	.00	.00	.00	.00	.00	.00					
12	.00	T	.30	.26	.29	.72	.00	.00	.00	.00	.00	.00					
13	.00	.03	.00	T	.04	1.36	.00	.14	.00	.00	.00	.00					
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
15	.39	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00					
16	.00	.45S	.00	.00	.38	.00	.32	.00	.69	.00	.03	.00					
17	.00	.00	.00	.00	.00	.00	.00	T	.76	.00	.00	.00					
18	.00	.06	.00	.00	.05	.00	.00	.00	.00	.00	.64	.00					
19	.13	.25	.13	.00	.08	1.46	.00	.00	.00	.00	.00	.00					
20	.00	.02	.04	.00	.00	.00	.00	.00	.04	.00	.04	.12S					
21	.00	.10S	1.42	.00	.00	.00	.00	.30	.00	.01	.47	.63S					
22	.36	.04	.06	.00	T	T	.31	.00	.00	.00	.01	.30S					
23	T	.43	.00	.00	.00	.14	.06	.00	.02	.00	.00	.00					
24	.00	.50	.00	.00	.00	.01	.00	.00	.02	.00	.00	.10S					
25	.00	.00	.00	.00	.07	.00	.37	.00	T	.00	.14	.64S					
26	.05	.30	.00	.00	.94	.52	.00	.00	.36	.00	.00	.05					
27	.17	.00	.00	.00	T	.00	.00	.00	.30	.00	.00	.00					
28	.62	.65	.00	.00	.19	.00	.00	.00	.00	.00	.05	.00					
29	.00	-----	.00	.21	.00	.00	.81	.00	.00	.00	.00	.87S					
30	.00	-----	.00	.00	.16	.00	.02	.00	.00	.04	.00	.00					
31	.00	-----	.67	-----	.00	-----	.02	.00	-----	.20	-----	.00					
TOTAL	3.34	3.89	4.81	2.79	3.41	6.82	3.82	1.59	2.82	1.63	5.70	3.04					
STA AV	2.21	4.92	4.47	3.07	2.78	5.78	3.47	3.10	3.75	2.78	3.53	3.50					
NOTES: PRECIPITATION VALUES ARE THIENSEN WEIGHTED AMOUNTS FROM R-1, R-2, AND R-3. STA AV IS FOR PERIOD SEPTEMBER 1960 THROUGH 1962. FOR DRAINAGE PATTERN MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 13.15-5.																	

1962 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA CHESTNUT BRANCH WATERSHED W-I 13.15						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.50	2.55	3.84	3.37	1.70	.82	.91	.61	.31	.39	.47	.75
2	1.29	1.98	2.62	1.73	2.06	.77	.95	.63	.31	.39	.46	.73
3	1.16	1.73	2.17	1.59	1.30	.76	1.08	.73	.33	.41	.78	.73
4	1.16	1.64	1.96	1.59	1.17	.76	2.24	.96	.43	1.28	.54	.73
5	1.16	1.50	1.96	1.59	1.12	3.14	1.67	.90	.37	1.03	1.07	.77
6	9.21	1.33	1.94	1.62	1.07	1.33	1.31	.75	.31	.51	.61	.84
7	5.01	1.25	2.69	6.23	1.02	.91	1.14	.54	.30	.47	.52	.69
8	2.58	1.25	3.39	8.35	1.02	.81	1.47	.55	.30	.44	.49	.66
9	2.03	3.33	3.22	3.82	1.03	.84	.95	.57	.33	.42	14.59	.61
10	1.86	2.76	3.55	2.61	1.03	.84	.82	.46	.46	.42	5.98	.55
11	2.02	2.13	12.93	2.69	1.16	3.58	.78	.43	.34	.42	1.65	.55
12	1.94	1.92	20.47	2.69	1.15	2.20	.80	.42	.30	.42	1.19	.61
13	1.64	1.74	6.05	2.42	1.24	13.63	.74	.53	.30	.42	.99	.66
14	1.55	1.64	3.42	2.06	1.08	5.20	.75	.48	.29	.42	.90	.66
15	2.31	1.46	2.56	1.90	1.01	2.10	.77	.45	.27	.42	.84	.66
16	1.77	1.79	2.25	1.80	1.16	1.55	.84	.46	.42	.42	.80	.66
17	1.50	1.81	1.96	1.77	.98	1.23	.83	.44	1.07	.42	.80	.66
18	1.42	1.73	1.81	1.73	.95	1.08	.75	.42	.39	.42	1.44	.66
19	1.38	2.39	1.83	1.64	.93	6.60	.69	.42	.36	.41	1.09	.66
20	1.29	1.92	1.77	1.55	.90	2.50	.69	.38	.36	.39	.99	.66
21	1.25	1.79	13.11	1.50	.85	1.65	.66	.42	.36	.43	1.15	.78
22	1.61	1.73	4.73	1.46	.84	1.35	.60	.43	.35	.42	1.69	1.60
23	1.73	2.60	3.22	1.42	.85	1.24	.77	.38	.35	.38	1.16	1.35
24	1.59	8.20	2.81	1.38	.81	1.16	.64	.34	.35	.38	1.03	1.12
25	1.55	3.02	2.62	1.33	.76	1.05	.83	.34	.38	.38	.98	1.21
26	1.46	3.26	2.53	1.33	1.44	1.74	.71	.32	.51	.42	.93	1.24
27	1.29	2.50	2.20	1.29	1.02	1.07	.64	.30	.62	.44	.85	1.72
28	1.62	5.86	1.96	1.25	.97	.95	.58	.29	.45	.46	.82	1.60
29	1.71	-----	1.81	1.32	.90	.92	1.12	.28	.42	.46	.80	2.49
30	1.81	-----	1.77	1.27	.93	.87	.77	.28	.38	.46	.76	2.51
31	3.14	-----	2.13	-----	.91	-----	.74	.31	-----	.50	-----	1.50
MEAN	2.02	2.39	3.91	2.21	1.08	2.09	.91	.48	.39	.47	1.55	.99
INCHES	1.41	1.50	2.73	1.49	.75	1.41	.64	.33	.26	.33	1.04	.69

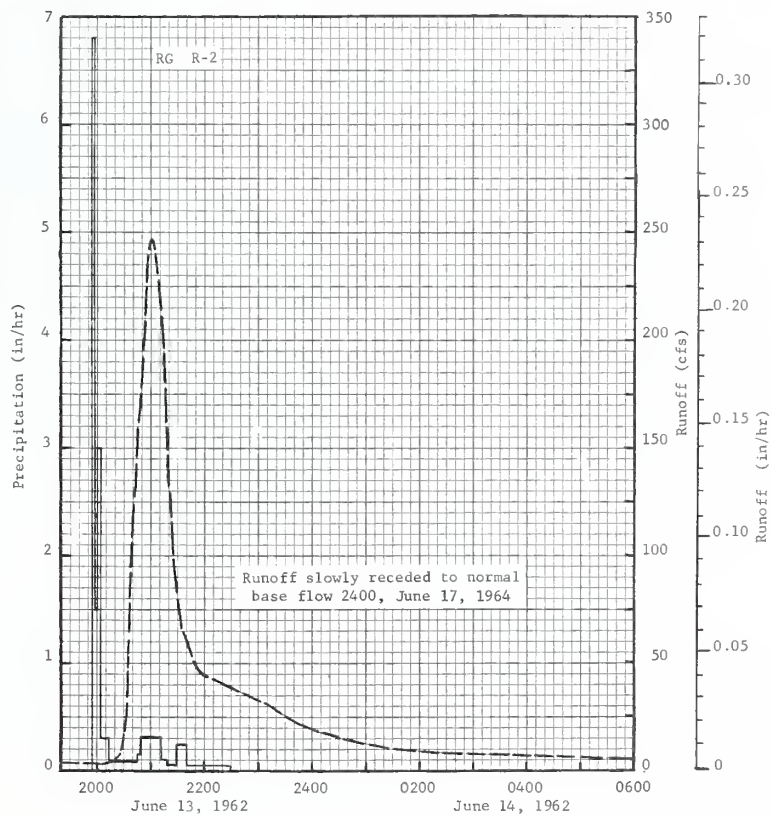
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.022497.

1962 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA CHESTNUT BRANCH WATERSHED W-1						13.15
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of June 13-14, 1962												
6-13	RG R-2 1/.76	2/.0684	6-13	RG	R-2		6-13	2000	3/ 3.499	.0000		
				1955	.00	.00		2012	3.649	.0007		
				1958	6.80	.34		2024	6.241	.0016		
6-13	RG R-3 4/.17			2000	1.50	.39		2028	10.209	.0021		
				2003	3.00	.54						
				2013	.30	.59		2032	24.014	.0032		
				2045	.09	.64		2034	45.606	.0043		
				2049	.15	.65		2036	56.531	.0059		
				2112	.31	.77		2038	81.217	.0080		
				2118	.10	.78		2040	117.894	.0111		
				2128	.06	.79		2043	134.792	.0171		
				2140	.25	.84		2046	158.070	.0239		
				2228	.05	.88		2052	197.201	.0406		
<u>Watershed conditions:</u> 36% farm woods, a mixture of hardwood and pine, good cover; 25% pasture, a good cover of native grasses and clovers; 26% hay mixture of alfalfa, clovers, and native grasses, excellent cover, 4- to 18-inch regrowth; 6% row crop, mostly corn 20 to 24 in. high; 6% idle, good cover of annual grasses and weeds; 1% roads.							2054	211.720	.0469			
							2056	234.860	.0539			
							2100	247.171	.0690			
							2102	246.691	.0767			
							2108	222.271	.0987			
							2112	200.903	.1119			
							2116	181.786	.1239			
							2118	163.916	.1293			
							2120	134.995	.1339			
							2122	123.644	.1380			
			2124	112.997	.1417							
			2126	101.380	.1450							
			2128	87.991	.1480							
			2134	67.209	.1553							
			2142	59.102	.1631							
			2156	46.129	.1747							
			2253	34.842	.2107							
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009374. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/.03 IN. RAIN, 0450 TO 0555; .70 IN., 1438 TO 1600; .03 IN., 1730 TO 1912. 2/PRIOR TO 2000. 3/LOWEST DISCHARGE VALUE OF PRECEDING SMALL STORM RECESSION. 4/.02 IN. RAIN, 0537 TO 0650; .15 IN., 1507 TO 1830.												

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009374. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/.03 IN. RAIN, 0450 TO 0555; .70 IN., 1438 TO 1600; .03 IN., 1730 TO 1912. 2/PRIOR TO 2000. 3/LOWEST DISCHARGE VALUE OF PRECEDING SMALL STORM RECESSION. 4/.02 IN. RAIN, 0537 TO 0650; .15 IN., 1507 TO 1830.

1962			SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA		CHESTNUT BRANCH WATERSHED W-I		13.15	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
			Event of June 13-14, 1962—Continued									
							6-13					
								2308	30.980	.2184		
								2317	28.377	.2226		
								2324	27.300	.2256		
								2335	23.577	.2300		
								2400	19.640	.2384		
							6-14					
								0020	17.154	.2442		
								0022	16.749	.2447		
								0048	14.061	.2510		
								0124	11.298	.2581		
								0156	10.081	.2635		
								0212	9.463	.2659		
								0349	7.404	.2787		
								0545	6.060	.2909		
								0704	5.430	.2980		
								0740	5.227	.3010		
								0840	4.801	.3057		
								1132	4.150	.3177		
								1320	3.819	.3245		
								1400	3.659	.3268		
								1640	3.179	.3354		
								1908	2.934	.3424		
								2400	2.678	.3552		
			TOTAL									
			RG				R-1					
			3 RG				AVG 1/					
							1.12					
							.93					
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009374.												
1/THIENEN WEIGHTED FOR RG R-1, R-2, R-3. 2/RUNOFF SLOWLY RE-												
CEDED TO NORMAL BASE FLOW AT 2400, JUNE 17, 1964.												

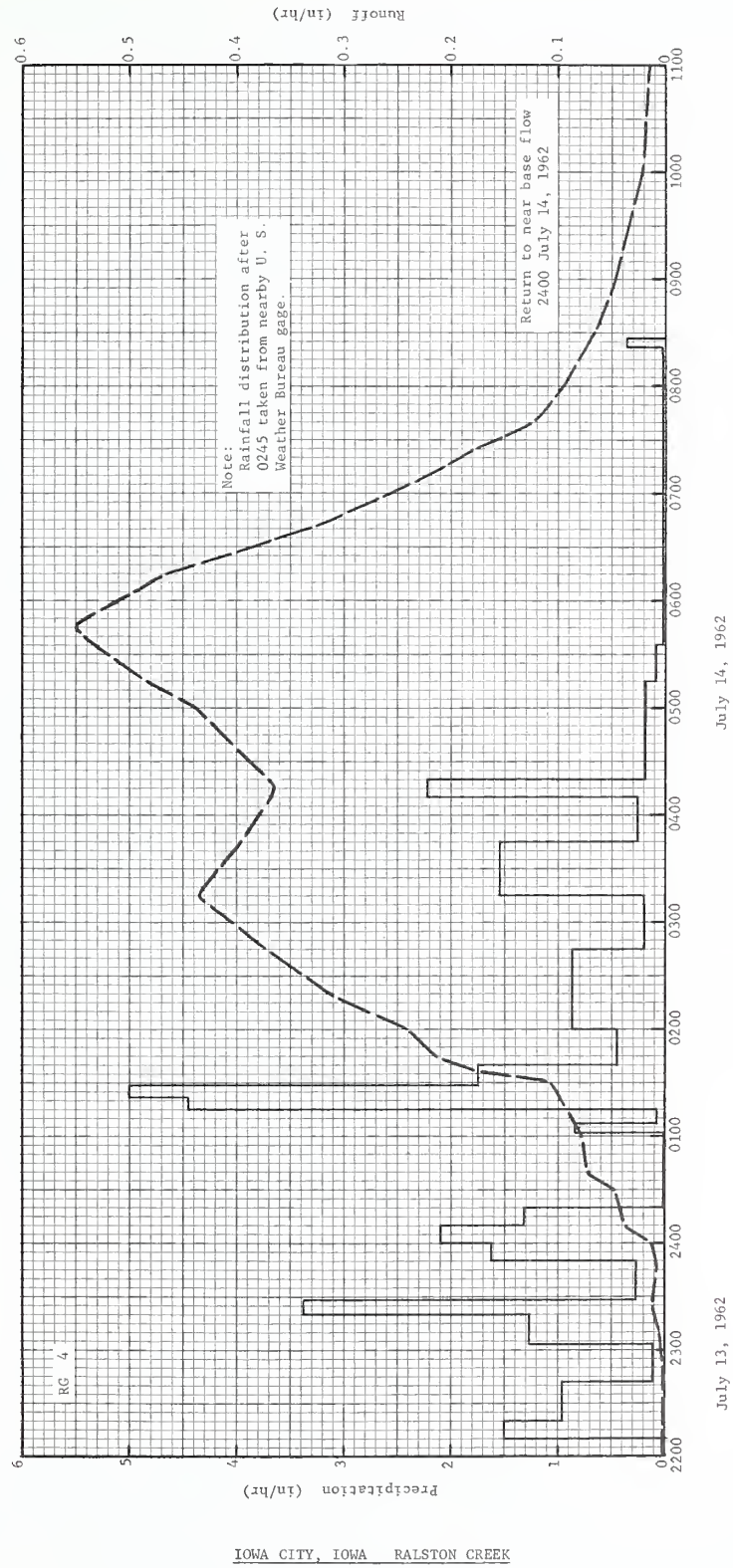
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009374.
 1/THIESSEN WEIGHTED FOR RG R-1, R-2, R-3. 2/RUNOFF SLOWLY RE-
 CEDED TO NORMAL BASE FLOW AT 2400, JUNE 17, 1964.



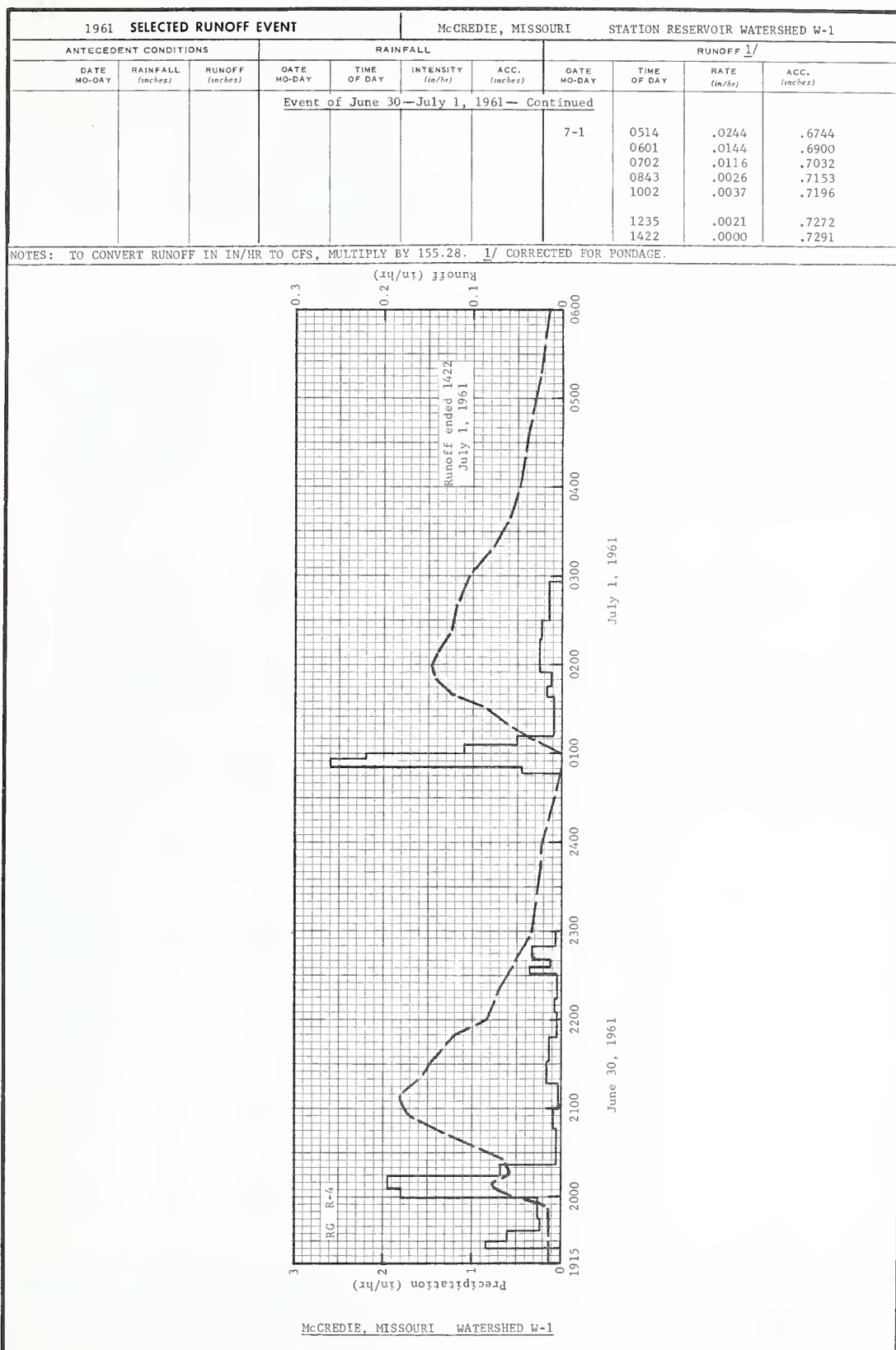
BLACKSBURG, VIRGINIA CHESTNUT BRANCH WATERSHED W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)							IOWA CITY, IOWA AREA—1,926 ACRES (3.01 SQ. MILES)							RALSTON CREEK		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	PL/ Q ² / ₂	1.14 .51	1.52 .74	2.01 5.46	1.50 1.30	6.49 1.48	2.19 .67	10.20 3.01	2.21 .32	1.78 .12	2.75 .25	1.02 .15	.69 .10	33.50 14.11		
STA AV ² / _P (25-62) Q		1.12 .44	1.09 .96	1.98 1.29	2.77 .71	3.57 .66	4.61 .77	3.86 .53	3.41 .32	3.48 .31	2.63 .30	2.09 .40	1.23 .27	31.84 6.96		
MEAN P ³ / _{112 YR}		1.50	1.41	2.27	2.81	3.99	4.50	3.88	3.51	3.84	2.58	2.02	1.53	33.84		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	7-14	.55	7-14	.51	7-14	.93	7-14	2.23	7-14	2.52	7-13	2.62	7-13	2.72	3-18	4.15
MAXIMUMS FOR PERIOD OF RECORD																
1924 TO 1962	7-18 1956	.86	7-18 1956	.65	7-14 1962	.93	7-14 1962	2.23	7-14 1962	2.52	7-13 1962	2.62	7-13 1962	2.72	3-18 1962	4.15
NOTES: Quality of records: P, excellent; Q, good, except fair to poor during periods of ice effect. Watershed conditions: Approximately 40% of area is cultivated; 35% in pasture; 20% in brush, timber, and orchards; and 5% in urban development, roads and farmsteads. 1/ Precipitation—Thiessen weighted average of 5 recording rain gages. 2/ Precipitation and runoff records began Sept. 1924; runoff records furnished by U. S. Geological Survey. 3/ Mean P based on 112-yr (1851-1962) U. S. Weather Bureau record period at Dubuque, Iowa.																
1962 SELECTED RUNOFF EVENT							IOWA CITY, IOWA RALSTON CREEK									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)						
	5 RG 4/		Event of July 13-14, 1962													
6-13	.00	.0149	7-13	RG	4		7-13	2254	.0017	.0000						
6-14	.00	.0136		2210	.00	.00		2309	.0041	.0007						
6-15	.00	.0124		2220	1.50	.25		2324	.0103	.0025						
6-16	.00	.0124		2242	.96	.60		2349	.0073	.0062						
6-17	.00	.0124		2303	.11	.64		2400	.0117	.0078						
6-18	.00	.0112	7-14	2320	1.27	1.00	7-14	0009	.0376	.0119						
6-19	.00	.0099		2328	3.38	1.45		0030	.0470	.0260						
6-20	.00	.0099		2350	.27	1.55		0039	.0721	.0359						
6-21	.13	.0099		2400	1.62	1.82		0100	.0781	.0609						
6-22	.11	.0099		0010	2.10	2.17		0130	.107	.1072						
6-23	.52	.0186		0020	1.32	2.39		0137	.180	.1264						
6-24	.00	.0074		0102	.01	2.40		0145	.214	.1494						
6-25	.00	.0062		0107	.84	2.47		0200	.241	.2064						
6-26	.00	.0062		0115	.08	2.48		0219	.311	.2985						
6-27	.00	.0062		0122	4.45	3.00		0249	.381	.4715						
6-28	.00	.0062	7-13	0128	5.00	3.50		0315	.435	.6417						
6-29	.00	.0037		0140	1.75	3.85		0345	.396	.8497						
6-30	.00	.0037		0200	.45	4.00		0415	.365	1.0403						
7-1	.05	.0037		5/0245	.87	4.65		0500	.439	1.3421						
7-2	.00	.0062		0315	.20	4.75		0515	.484	1.4575						
7-3	.00	.0037		0345	1.04	5.27		0545	.550	1.7161						
7-4	.00	.0037		0410	.26	5.38		0615	.466	1.9702						
7-5	.00	.0037		0420	2.22	5.75		0630	.381	2.0761						
7-6	.00	.0037		0515	.19	5.92		0645	.311	2.1626						
7-7	.18	.0037		0535	.09	5.95		0700	.256	2.2336						
7-8	.35	.0050		0822	.02	6.00		0715	.206	2.2915						
7-9	.00	.0025		0827	.36	6.03		0724	.180	2.3237						
7-10	.00	.0025					0739	.126	2.3621							
7-11	.00	.0025					0800	.0958	2.3992							
7-12	.03	.0037					0830	.0661	2.4396							
7-13	6/1.15	7/.0375					0900	.0484	2.4683							
							1000	.0208	2.5029							
							1200	.0126	2.5364							
							1500	.0085	2.5680							
							1930	.0066	2.6022							
Watershed conditions: Corn, 3 to 5 ft high Oats, harvested Alfalfa and clover, actively growing. Soil conditions, dry								2400	8/.0054	2.6294						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1442.04. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 21.1-6. 4/THIESSEN WEIGHTED AVERAGE OF 5 RG. 5/BEYOND THIS POINT, RG R-4 FAILED TO RECORD ALTHOUGH A TOTAL MEASUREMENT WAS OBTAINED. A U.S. WEATHER BUREAU GAGE ABOUT 3 MI N.W. WAS USED TO COMPLETE THE DISTRIBUTION. TOTALS NOT OBTAINED AT OTHER 4 RG ON WATERSHED. 6/1.08 INCHES, 0955 TO 1420; .07 INCH, 1815 TO 2115. 7/RUNOFF TO 2254. 8/RETURN TO NEAR BASE FLOW.																

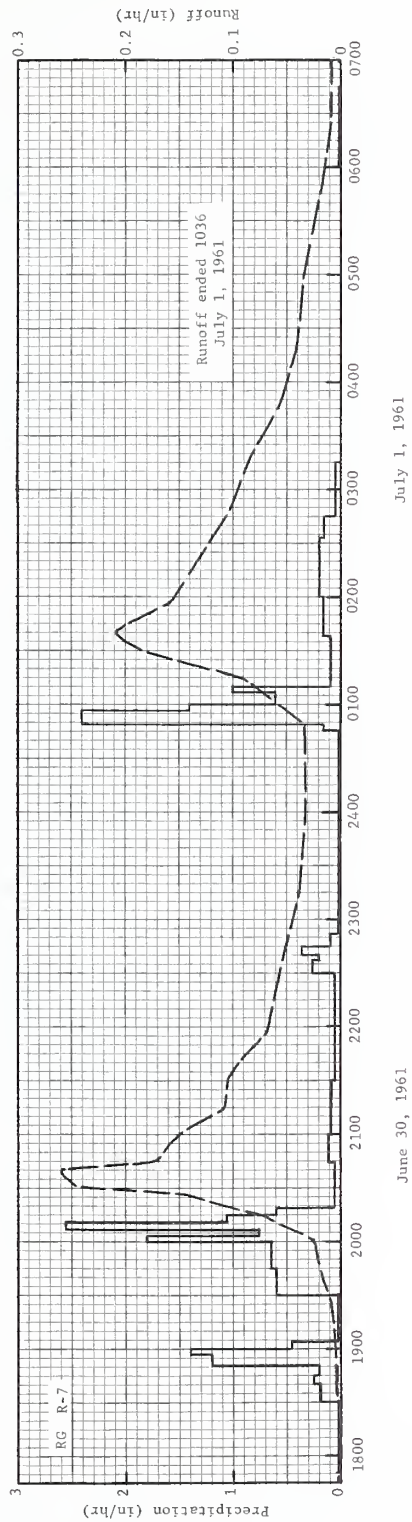
Cooperative Research Project of USDA, U.S. Geological Survey and State University of Iowa



MONTHLY PRECIPITATION AND RUNOFF (inches)						McGREDIE, MISSOURI STATION RESERVOIR WATERSHED W-1 AREA — 154 ACRES 1/										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 2/ Q	1.26 .78	2.21 1.78	2.65 2.34	1.39 .00	2.50 .00	1.42 .00	3.29 .00	1.73 .00	4.18 .00	2.67 .00	.67 .00	1.20 .00	25.17 4.90			
STA AV 3/ P (41-62) Q	1.43 .49	1.74 .79	2.79 1.36	3.48 1.16	4.10 .91	4.50 .88	3.59 .51	2.95 .08	3.60 .45	3.68 .95	1.92 .43	1.59 .38	35.37 8.39			
MEAN P 4/ 73 YR	1.86	1.82	2.90	3.68	4.71	4.67	3.49	3.74	4.33	2.92	2.18	1.82	38.12			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1961 5/	5-5	.41	5-5	.28	5-5	.47	5-5	.91	5-5	1.14	5-5	1.25	5-5	1.33	5-4	2.51
1962	3-20	.28	3-20	.24	3-20	.45	3-20	1.05	3-20	1.63	3-20	1.87	3-20	1.95	3-17	2.06
MAXIMUMS FOR PERIOD OF RECORD 6/																
1941 TO 1962	10-4 1941	2.02	10-4 1941	1.20	10-4 1941	1.96	10-4 1941	3.94	10-4 1941	6.97	10-4 1941	7.74	10-3 1941	8.06	10-2 1941	8.80
Notes: Quality of records: P, excellent; Q, excellent, except good during periods of ice. Watershed conditions; 22% in row crops of corn and soybeans; 16% in plots of row crops of soybeans and corn; 32% in alfalfa; 24% in grassland; 6% in roads and farmstead. 1/Revised from 153 acres, based on more precise measurements. 2/Precipitation-Thiessen weighted average of gages R-4 and S-6. (Map location and name of S-6 in error, see note 8/). 3/Precipitation and runoff records began Jan. 1941. 4/Mean P based on the 73-yr (1890-1962) U.S. Weather Bureau record period at Columbia, Mo. 5/Revision of previous date for 6 hour volume (underlined). 6/Underlined values have been revised since earlier publication.																
1961 SELECTED RUNOFF EVENT						McGREDIE, MISSOURI STATION RESERVOIR WATERSHED W-1										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF 7/									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 30—July 1, 1961																
2 RG 8/			RG R-4													
6-2	.15	.0000	6-30	1925	.00	.00	6-30	1944	.0123	.0000						
6-6	.20	.0000		1930	.84	.07		1952	.0136	.0018						
6-7	.26	.0000		1937	.60	.14		2000	.0517	.0061						
6-8	.72	.0000		1945	.23	.17		2008	.0778	.0148						
6-13	.33	.0000		1952	.26	.20		2016	.0578	.0238						
6-14	.02	.0000		1959	.26	.23		2026	.0648	.0340						
6-15	.49	.0000		2006	1.80	.44		2042	.126	.0595						
6-30	9/2.26	10/1564		2014	1.95	.70		2056	.172	.0944						
				2022	.68	.79		2108	.181	.1297						
				2046	.05	.81		2120	.159	.1637						
				2059	.09	.83		2130	.148	.1894						
				2117	.03	.84		2150	.120	.2341						
				2131	.17	.88		2200	.0836	.2510						
				2148	.14	.92		2220	.0707	.2767						
				2205	.04	.93		2240	.0510	.2970						
Watershed conditions: Corn and soybeans 1 to 2 ft. tall; alfalfa and grass greater than 6 inches tall.																
				2214	.07	.94		2300	.0329	.3111						
				2231	.04	.95		2330	.0271	.3261						
				2236	.36	.98		2400	.0222	.3385						
				2241	.12	.99		0030	.0072	.3458						
				2250	.33	1.04		0050	.0000	.3471						
			7-1	2300	.06	1.05		0100	.0000	.3471						
				0047	.00	1.05		0110	.0337	.3499						
				0051	.45	1.08		0120	.0610	.3578						
				0057	2.60	1.34		0130	.0841	.3699						
				0100	2.20	1.45		0140	.124	.3872						
				0106	1.10	1.56		0150	.142	.4094						
				0112	.50	1.61		0200	.146	.4334						
				0138	.09	1.65		0210	.139	.4571						
				0145	.17	1.67		0220	.126	.4792						
				0155	.12	1.69		0240	.118	.5198						
				0217	.25	1.78		0300	.104	.5568						
				0230	.23	1.83		0320	.0774	.5871						
				0256	.14	1.89		0340	.0585	.6098						
				RG	S-6	1.60		0400	.0485	.6276						
				2 RG	AVG.	1.79 8/		0437	.0387	.6545						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 155.28. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 25.1-8. 7/ ALL FLOWS CORRECTED FOR PONDAGE IN 16 AC. POND ABOVE 2.5 FT. SQUARE DROP INLET CONTROL AND FOR RAINFALL FALLING DIRECTLY ON POND SURFACE. 8/ THIENSEN WEIGHTED AVERAGE OF RAIN GAGES R-4 AND S-6. (S-6 HAS ALWAYS BEEN A STANDARD GAGE, BUT WAS ERRONEOUSLY SHOWN ON MAP CITED ABOVE AS R-6. ITS LOCATION IS ALSO IN ERROR, AND IS ACTUALLY 70 FT. SOUTH AND 230 FT. WEST OF PLOTTED R-6 POSITION.) 9/ 1.88 INCHES FROM 1155 TO 1420, 0.38 INGH FROM 1555 TO 1925. 10/ RUNOFF FROM 1200 TO 1944.																

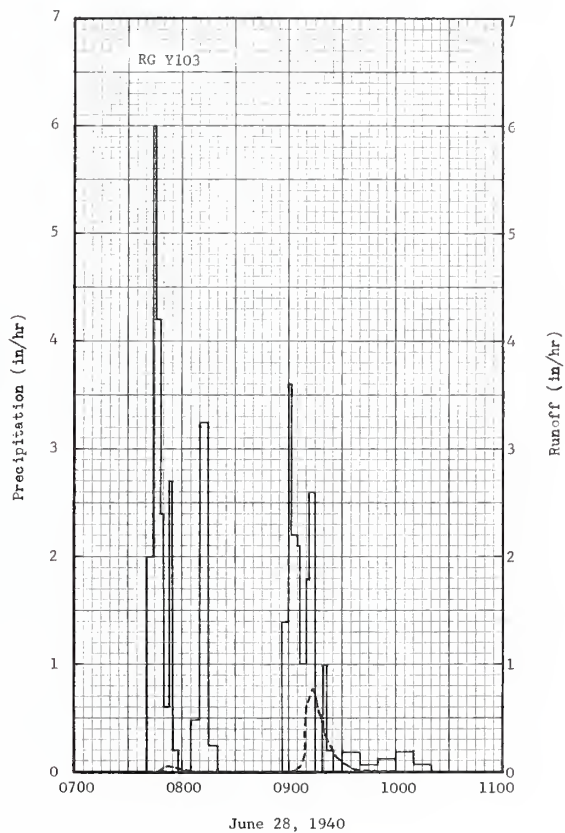


MONTHLY PRECIPITATION AND RUNOFF (inches)						McCREIDIE, MISSOURI S. W. POND NO. 2 WATERSHED AREA — 44.3 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ¹	1.27	2.19	2.72	1.37	2.33	1.41	3.16	1.81	4.14	2.52	.62	1.14	24.68			
Q	.87	1.52	2.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.54			
STA AV ² /P	1.14	1.88	2.53	3.11	3.58	3.69	3.85	2.68	2.99	3.02	1.66	1.51	31.64			
(51-62) Q	.28	.66	1.12	.66	.45	.26	.41	.04	.11	.31	.17	.12	4.59			
MEAN P ³ / _{73 YR}	1.86	1.82	2.90	3.68	4.71	4.67	3.49	3.74	4.33	2.92	2.18	1.82	38.12			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	3-20	.26	3-20	.24	3-20	.46	3-20	1.08	3-20	1.68	3-20	1.94	3-20	1.98	3-20	1.98
MAXIMUMS FOR PERIOD OF RECORD																
1951 to 1962	3-27 1960	1.02	3-27 1960	.55	3-27 1960	.95	3-27 1960	1.73	3-27 1960	1.91	3-27 1960	2.14	3-26 1960	2.42	3-26 1960	2.84
Notes: Quality of records: P, excellent; Q, excellent, except good during periods of ice. Watershed conditions: 57% in alfalfa; 25% in corn; 16% in grassland; 2% in roads and misc. 1/Precipitation from RG R-7. 2/Precipitation and runoff records began Jan.1951. 3/Mean P based on 73-yr (1890-1962) U.S. Weather Bureau record period at Columbia, Mo.																
1961 SELECTED RUNOFF EVENT						McCREIDIE, MISSOURI S. W. POND NO. 2 WATERSHED										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF ⁴ /									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 30—July 1, 1961																
	RG R-7		6-30	RG	R-7		6-30	1821	.0018	.000						
				1750	.00	.00		1830	.0018	.000						
6-2	.14	.0000		1830	.02	.01		1851	.0031	.001						
6-6	.20	.0000		1840	.18	.04		1903	.0049	.002						
6-7	.25	.0000		1845	.24	.06		1927	.0090	.005						
6-8	.64	.0000		1851	.20	.08		1936	.0139	.006						
6-13	.32	.0000		1857	1.20	.20		1952	.0208	.012						
6-14	.04	.0000		1900	1.40	.27		2001	.0240	.015						
6-15	.45	.0000		1904	.45	.30		2013	.0669	.024						
6-30	5/2.13	6/0487		1930	.02	.31		2027	.145	.047						
				1945	.60	.46		2031	.246	.063						
				2000	.64	.62		2039	.260	.093						
				2003	1.80	.71		2045	.169	.118						
				2007	.75	.76		2055	.159	.146						
				2011	2.55	.93		2103	.142	.163						
				2015	1.05	1.00		2115	.108	.188						
				2019	.60	1.04		2131	.103	.218						
				2044	.05	1.06		2142	.0911	.234						
				2100	.11	1.09		2157	.0683	.255						
				2130	.08	1.13		2233	.0548	.292						
				2142	.05	1.14		2251	.0484	.308						
				2204	.05	1.16		2315	.0378	.325						
				2230	.05	1.18		2400	.0307	.351						
				2237	.26	1.21	7-1	0049	.0322	.377						
				2240	.20	1.22		0115	.0904	.404						
				2245	.36	1.25		0130	.186	.436						
			7-1	2252	.09	1.26		0139	.208	.469						
				0045	.01	1.28		0157	.158	.524						
				0049	.15	1.29		0246	.105	.632						
				0054	2.40	1.49		0318	.0831	.683						
				0057	2.40	1.61		0348	.0564	.718						
				0100	1.40	1.68		0418	.0401	.742						
				0107	.60	1.75		0458	.0345	.768						
				0110	1.00	1.80		0542	.0199	.788						
				0138	.09	1.84		0625	.0092	.798						
				0200	.16	1.90		0706	.0087	.804						
				0233	.20	2.01		0806	.0056	.812						
				0245	.15	2.04		0848	.0038	.815						
				0315	.04	2.06		0939	.0040	.818						
				0600	.00	2.07		1000	.0009	.819						
				0645	.01	2.08		1036	.0000	.820						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 44.669. FOR MAP OF WATERSHED, SEE 1956-59 USDA MISC. PUB. 945, P. 25.2-4. (THIS MAP IS INCOMPLETE, SINCE IT SHOWS ONLY 9 TERRACES. A 10TH TERRACE, 450 FT LONG, DRAINS SOUTHWARD FROM THE UPPER END OF THE LOWEST TERRACE IN THE NORTH TO THE EAST-WEST TERRACE OUTLET AT THE 840 CONTOUR. THE 4 TERRACES THAT FLOW NORTHWARD INTO THIS SAME OUTLET ARE LONGER THAN SHOWN ON THE MAP AND THE 3 LOWER ONES ACTUALLY BEGIN AT THE SOUTHEAST WATERSHED BOUNDARY). ⁴ / FLOWS CORRECTED FOR PONDAGE IN 1 AC. POND ABOVE 12 IN. DIA. DROP INLET CONTROL. ⁵ / 2.07 INCHES FROM 1155 TO 1420; 0.06 INCH FROM 1555 TO 1750. ⁶ / RUNOFF FROM 1212 TO 1821.																



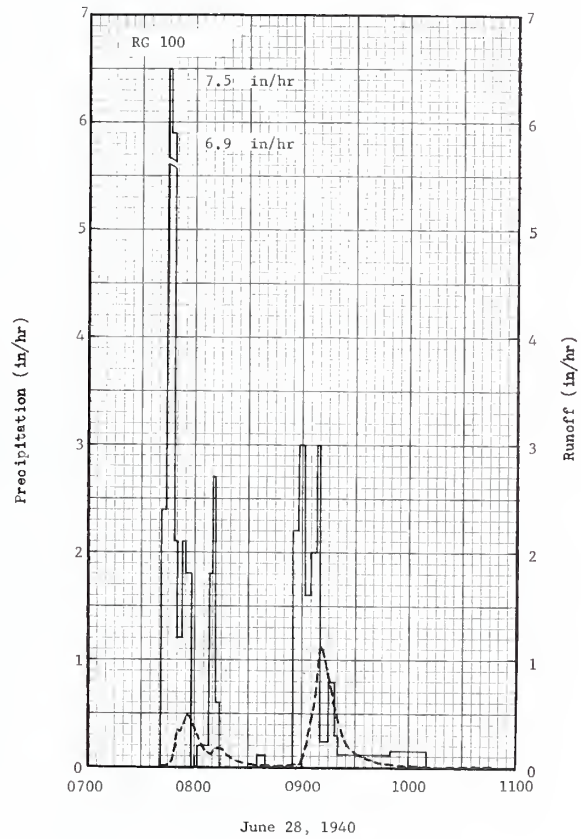
McCREDIE, MISSOURI S. W. POND NO. 2 WATERSHED

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCOTON, OHIO WATERSHED 102 AREA—1.26 ACRES								26.01		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P 1/ Q	2.97 .35	3.40 .43	2.93 .00	1.54 .00	2.70 .00	1.80 .00	2.56 .00	2.05 .00	5.15 .00	2.24 .00	2.95 .00	2.10 .00	32.39 .78			
STA AV ² / (37-62)	P Q	1.42 .03	2.50 .04	3.99 .05	3.22 .07	4.19 .01	5.61 .25	4.08 .04	3.28 .05	2.29 .02	2.67 .01	2.26 T	2.10 .00	37.61 .57			
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962		2-23	.27	2-23	.18	2-23	.25	2-23	.28	2-23	.28	2-23	.28	2-23	.29	2-19	.37
MAXIMUMS FOR PERIOD OF RECORD																	
1937 to 6-12	3.64	6-12	1.31	6-12	1.32	6-12	1.32	6-12	1.32	6-12	1.33	6-12	1.33	6-12	1.33	6-12	1.33
1962 4/ 1957		1957		1957		1957		1957		1957		1957		1957		1957	
NOTES: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, excellent. Watershed conditions: Cover of birdsfoot trefoil. 1/ Precipitation obtained from rain gage Y101. 2/ Precipitation and runoff records began April 1937. Watershed discontinued Jan. 1, 1947, to Apr. 30, 1957, and Sept. 1, 1957, to Mar. 26, 1960. Part-year amounts are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No maximums taken for 1947 through 1956 or 1958 and 1959.																	
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																	
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																	
GEOLOGY: Sedimentary rocks of the Pennsylvania system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The Lower Freeport sandstone occurs beneath the upper 95% of the watershed. The Washingtonville shale member occurs beneath 80 in. of soil at the watershed outlet. The rock strata form a portion of a small subsurface basin which is inclined to the southeast at about 1°. Source of data: James B. Urban, Geologist. See geologic map on p. 26.30-3.																	
1940 SELECTED RUNOFF EVENT							COSHOCOTON, OHIO WATERSHED 102 26.01										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)							
Event of June 28, 1940																	
	RG Y101			RG	Y103 5/												
5-29	.41	.00	6-28	0741	.00	.00	6-28	0747	.0000	.00							
5-30	.93	.00		0744	2.00	.10		0749	.0150	T							
6-7	.10	.00		0746	6.00	.30		0750	.0331	T							
6-8	.32	.00		0748	4.20	.44		0756	.0331	T							
6-9	.36	.00		0750	2.40	.52		0800	.0150	.01							
6-10	.85	.00		0753	.60	.55		0805	.0000	.01							
6-11	.40	.00		0755	2.70	.64		0900	.0000	.01							
6-12	.57	.00		0758	.20	.65		0903	.0032	.01							
6-15	.05	.00		0805	.00	.65		0905	.0331	.01							
6-18	1.48	T		0810	.48	.69		0907	.0433	.01							
6-19	T	.00		0815	3.24	.96		0908	.141	.01							
6-23	.83	.00		0820	.24	.98		0909	.386	.01							
6-24	.11	.00		0857	.00	.98		0910	.607	.02							
6-25	.24	.00		0900	1.40	1.05		0913	.780	.06							
6-26	.10	.00		0902	3.60	1.17		0915	.662	.08							
				0905	2.20	1.28		0917	.559	.10							
				0907	2.10	1.35		0918	.481	.11							
				0910	1.00	1.40		0920	.386	.12							
				0912	1.80	1.46		0922	.291	.14							
				0915	2.60	1.59		0924	.213	.14							
				0919	.00	1.59		0926	.141	.15							
				0922	1.00	1.64		0930	.0803	.16							
				0925	.20	1.65		0934	.0331	.16							
				0930	.00	1.65		0937	.0150	.16							
				0940	.18	1.68		0950	.0032	.16							
				0950	.06	1.69		1000	.0000	.16							
				1000	.12	1.71											
				1010	.18	1.74											
				1020	.06	1.75											
Notes: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.2705. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.1-4. 5/ NO RECORD FROM RAIN GAGE Y101.																	



COSHOCTON, OHIO WATERSHED 102

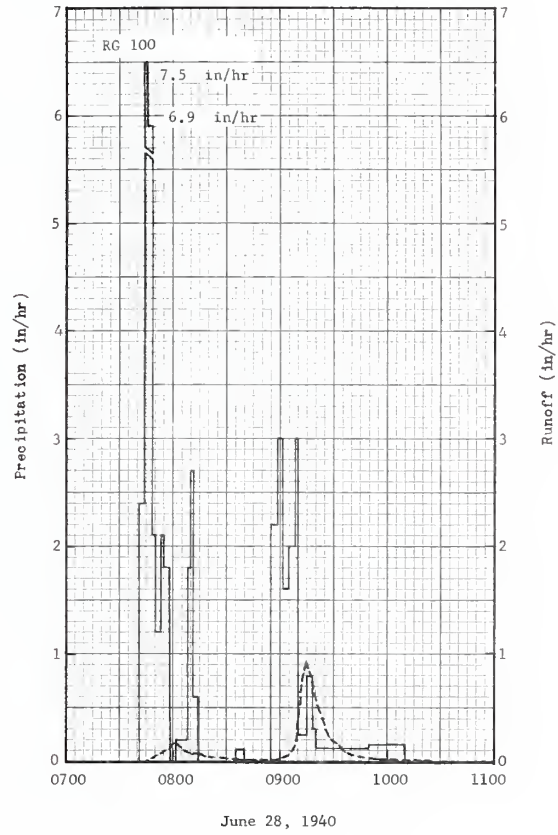
MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCKTON, OHIO				WATERSHED 129				26.03		
							AREA—2.71 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P 1/	2.96	3.58	3.20	1.37	2.64	1.82	2.52	1.93	5.31	2.21	3.19	2.07	32.80			
	Q	.06	.08	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.15			
STA AV2/	P	2.76	2.54	3.30	3.38	3.93	4.48	4.28	2.97	2.57	2.22	2.40	2.14	36.97			
(38-62)	Q	.05	.13	.03	.06	.06	.17	.07	.05	.05	.01	.01	.01	.70			
MEAN P 3/																	
54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962		2-23	.07	2-23	.04	2-23	.07	2-23	.08	2-23	.08	2-23	.08	2-23	.08	2-23	.08
MAXIMUMS FOR PERIOD OF RECORD																	
1938 to	6-12	2.36E	6-12	.98	9-1	1.01	9-1	1.01	2-23	1.02	2-13	1.02	2-13	1.02	2-13	1.02	
1962	1957		1957		1950		1950		1948		1948		1948		1948		
Notes: Quality of records: Monthly P, excellent; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: Improved practice pasture. 1/ Precipitation obtained from rain gage 100. 2/ Precipitation and runoff records began Apr. 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																	
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																	
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. Arenaceous shales and siltstones overlie the massive Lower Freeport sandstone. Arenaceous shale underlies the sandstone. Coal-clay aquifer occurs 9 ft beneath the watershed outlet. Rock strata are inclined approximately 1° to the east. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																	
1940 SELECTED RUNOFF EVENT							COSHOCKTON, OHIO				WATERSHED 129				26.03		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)							
Event of June 28, 1940																	
5-29	.43	.09E .00 T	6-28	RG	100		6-28	0742	.0000	.00							
5-30	.83			0744	2.40	.08		0746	.0154	T							
5-31	T			0746	7.50	.33		0748	.157	T							
6-7	.10			0748	6.90	.56		0750	.348	.01							
6-8	.34	T		0750	2.10	.63		0752	.337	.02							
6-9	.36	T		0753	1.20	.69		0755	.465	.04							
6-10	1.00	.01		0755	2.10	.76		0756	.494	.05							
6-11	.40	.01		0758	1.80	.85		0758	.450	.06							
6-12	.60	.01		0802	.00	.85		0800	.362	.08							
6-14	.07	.00		0808	.20	.87		0804	.198	.10							
6-15	.02	.00		0810	1.80	.93		0809	.117	.11							
6-18	1.53	.15		0812	2.70	1.02		0812	.157	.12							
6-23	.89	.01		0814	.60	1.04		0814	.179	.12							
6-24	.05	.00		0835	.00	1.04		0817	.157	.13							
6-25	.23	T			0840	.12		1.05	0822	.0816	.14						
6-26	.14	.00			0855	.00		1.05	0832	.0201	.15						
Watershed conditions: In pasture (improved practice). Grass and weeds 6in. high, density of cover 80%.					0858	2.20	1.16	0849	.0015	.15							
					0902	3.00	1.36	0859	.0256	.15							
					0905	1.60	1.44	0901	.117	.15							
					0908	2.00	1.54	0903	.293	.16							
					0910	3.00	1.64	0905	.450	.17							
					0915	.24	1.66	0908	.688	.20							
					0918	.80	1.70	0910	1.06	.23							
					0920	.30	1.71	0911	1.12	.24							
					0950	.12	1.77	0912	1.06	.26							
					1010	.15	1.82	0914	.835	.29							
				0918	.575	.34											
				0922	.348	.37											
				0927	.179	.39											
				0933	.0988	.41											
				0947	.0256	.42											
				1007	.0037	.42											
				1047	.0000	.42											
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.7326. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.3-5.																	



COSHOCOTON, OHIO WATERSHED 129

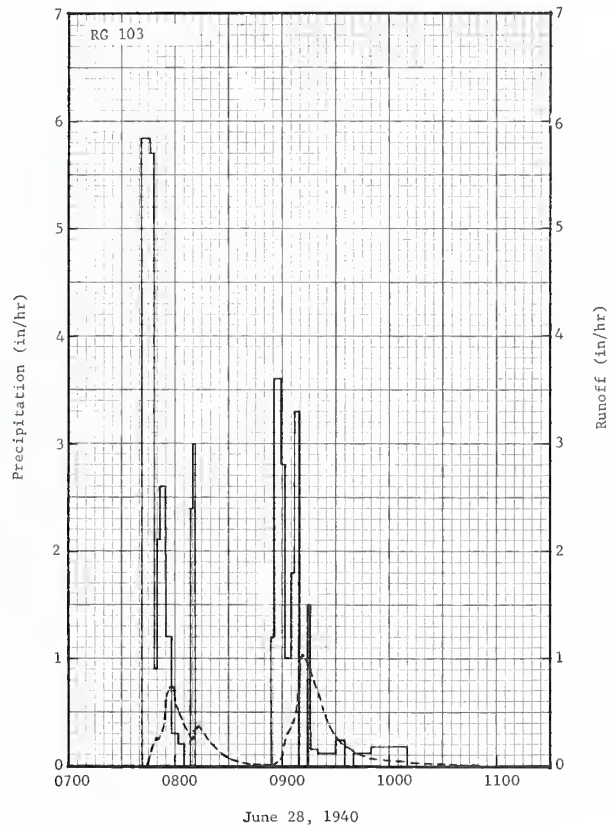
MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO				WATERSHED 135				26.04			
							AREA—2 69 ACRES											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1962	P1/ Q	2.96 .26	3.58 .87	3.20 .00	1.37 .00	2.64 .00	1.82 .00	2.52 .01	1.93 .00	5.31 .00	2.21 .00	3.19 .00	2.07 .00	32.80 1.14				
STA AV2/ (38-62)	P Q	2.76 .05	2.54 .10	3.30 .01	3.38 .03	3.93 .02	4.48 .13	4.28 .05	2.97 .04	2.57 .05	2.22 T	2.40 .01	2.14 .01	36.97 .50				
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																		
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962	2-23	.34	2-23	.25	2-23	.36	2-23	.49	2-23	.49	2-23	.49	2-23	.58	2-23	.72		
MAXIMUMS FOR PERIOD OF RECORD																		
1938 to 1962	6-12 1957	2.38	6-12 1957	.92	9-1 1950	.94	9-1 1950	.95	9-1 1950	.95	9-1 1950	.95	9-1 1950	.95	9-1 1950	.95		
Notes: Quality of records: Monthly P, excellent; monthly Q, good; annual discharges and volumes, good. Watershed conditions: Unimproved pasture. 1/ Precipitation obtained from rain gage 100. 2/ Precipitation and runoff records began Apr. 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																		
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																		
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. Arenaceous shales and siltstones overlie the massive Lower Freeport sandstone in the upper 60% of the watershed. Arenaceous shale underlies the sandstone. Rock strata are inclined approximately 1° to the east. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																		
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO				WATERSHED 135				26.04				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF											
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)								
Event of June 28, 1940																		
	RG 100			RG	100													
5-29	.43	T	6-28	0742	.00	.00	6-28	0745	.0000	.00								
5-30	.83	.00		0744	2.40	.08		0748	.0317	T								
5-31	T	.00		0746	7.50	.33		0752	.0660	T								
6-7	.10	.00		0748	6.90	.56		0754	.0907	.01								
6-8	.34	.00		0750	2.10	.63		0758	.108	.01								
6-9	.36	.00		0753	1.20	.69		0800	.159	.02								
6-10	1.00	T		0755	2.10	.76		0801	.170	.02								
6-11	.40	T		0758	1.80	.85		0802	.147	.02								
6-12	.60	T		0802	.00	.85		0807	.0907	.03								
6-14	.07	.00		0808	.20	.87		0811	.0586	.04								
6-15	.02	.00		0810	1.80	.93		0814	.0741	.04								
6-18	1.53	.01		0812	2.70	1.02		0816	.0586	.04								
6-23	.89	T		0814	.60	1.04		0822	.0317	.05								
6-24	.05	.00		0835	.00	1.04		0827	.0317	.05								
6-25	.23	.00		0840	.12	1.05		0836	.0111	.05								
6-26	.14	.00		0855	.00	1.05		0847	.0015	.05								
				0858	2.20	1.16		0859	.0070	.05								
				0902	3.00	1.36		0902	.0317	.06								
				0905	1.60	1.44		0905	.0660	.06								
				0908	2.00	1.54		0908	.147	.06								
				0910	3.00	1.64		0911	.645	.08								
				0915	.24	1.66		0913	.859	.11								
				0918	.80	1.70		0914	.933	.12								
				0920	.30	1.71		0915	.896	.14								
Watershed conditions: In pasture (prevailing practice). Grass 5 in. high, weeds and briars 4 in. high, density of cover 85%.																		
				0950	.12	1.77		0918	.730	.18								
				1010	.15	1.82		0921	.512	.21								
								0924	.365	.23								
								0927	.273	.25								
								0930	.188	.26								
								0933	.136	.27								
								0936	.0907	.27								
								0945	.0376	.28								
								1000	.0111	.29								
								1025	.0000	.29								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.7124. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.4-5.																		

Cooperative Research Project of USDA and Ohio Agricultural Experiment Station



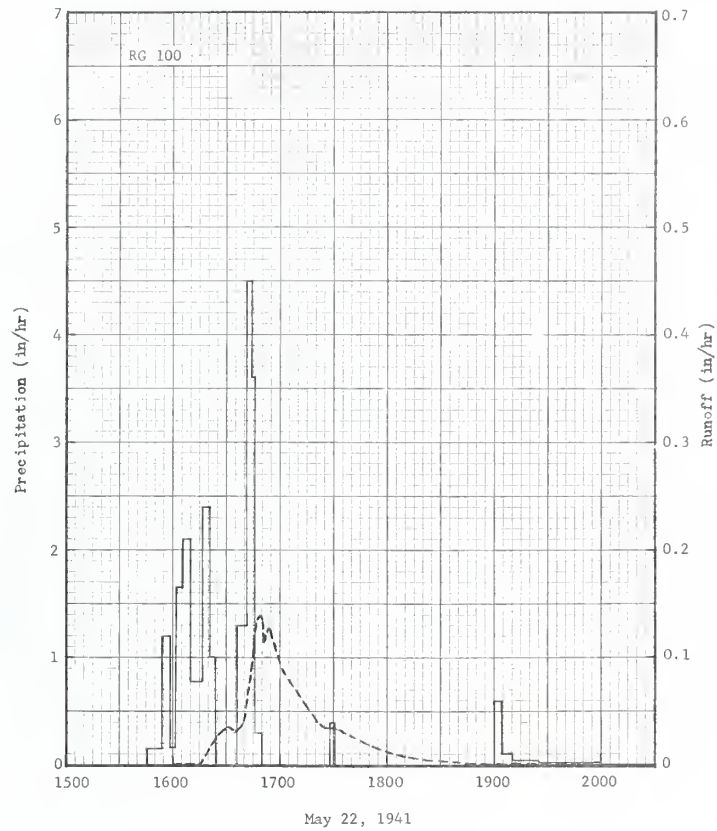
COSHOCTON, OHIO WATERSHED 135

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO				WATERSHED 130				26.05	
							AREA—1.63 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	2.88	3.37	3.08	1.18	2.66	1.79	2.54	1.97	5.31	2.28	3.01	2.11	32.18		
	Q	.05	.34	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.49		
STA AV2/ (38-62)	P	2.71	2.45	3.16	3.27	3.87	4.41	4.36	2.87	2.61	2.22	2.40	2.11	36.44		
	Q	.12	.16	.07	.10	.03	.21	.07	.03	.06	T	T	.01	.86		
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.16	2-23	.12	2-23	.18	2-23	.23	2-23	.24	2-23	.24	2-23	.24	2-23	.33
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 19 62	6-12 1957	4.06	6-12 1957	1.42	6-12 1957	1.44	6-12 1957	1.44	6-12 1957	1.44	6-12 1957	1.44	6-12 1957	1.44	6-12 1957	1.44
Notes: Quality of records: Monthly P, excellent; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: Improved practice meadow. 1/ Rain gage 103. 2/ Precipitation and runoff records began May 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny and Gonemaugh series, occur beneath 30 in. to 80 in. of soil. The Mahoning sandstone caps the northwest corner and is underlain by an arenaceous shale, the Lower Freeport sandstone. The Washingtonville shale member occurs just below the flume. The Middle Kittanning coal-clay aquifer occurs 8 ft below the flume. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT							COSHOCTON, OHIO				WATERSHED 130				26.05	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RG 103			RG	103											
5-29	.45	.00	6-28	0742	.00	.00	6-28	0744	.0000	.00						
5-30	.78	.00		0746	5.85	.39		0745	.0249	T						
6-7	.12	.00		0748	5.70	.58		0746	.0913	T						
6-8	.26	.00		0750	.90	.61		0747	.134	T						
6-9	.32	.00		0752	2.10	.68		0749	.268	.01						
6-10	1.01	T		0755	2.60	.81		0751	.237	.02						
6-11	.47	T		0758	1.20	.87		0753	.359	.03						
6-12	.62	T		0802	.30	.89		0755	.608	.04						
6-14	.06	.00		0805	.20	.90		0757	.730	.07						
6-15	T	.00		0808	.00	.90		0759	.730	.09						
6-18	1.45	.17		0810	2.40	.98		0800	.572	.10						
6-23	.88	T		0812	3.00	1.08		0803	.462	.13						
6-24	.03	.00		0854	.00	1.08		0809	.237	.16						
6-25	.24	.00		0856	1.20	1.12		0811	.329	.17						
6-26	.14	.00		0859	3.60	1.30		0813	.377	.18						
				0902	2.80	1.44		0819	.237	.21						
				0905	1.00	1.49		0831	.0730	.24						
				0907	1.80	1.55		0839	.0249	.25						
				0909	3.30	1.66		0855	.0018	.25						
				0914	.00	1.66		0859	.0548	.25						
				0916	1.50	1.71		0902	.237	.26						
				0920	.15	1.72		0905	.359	.28						
				0930	.12	1.74		0908	.572	.30						
				0935	.24	1.76		0910	.852	.32						
				0940	.00	1.76		0912	1.03	.35						
				0950	.12	1.78		0917	.852	.43						
				1010	.18	1.84		0924	.462	.51						
								0931	.237	.55						
								0940	.116	.57						
								0948	.0548	.58						
								1015	.0146	.60						
								1050	.0000	.60						
Watershed conditions: In permanent meadow (improved practice). Hay removed June 25. Grass, clover and weeds 2 in. high, density of cover 85%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6436. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.5-5.																



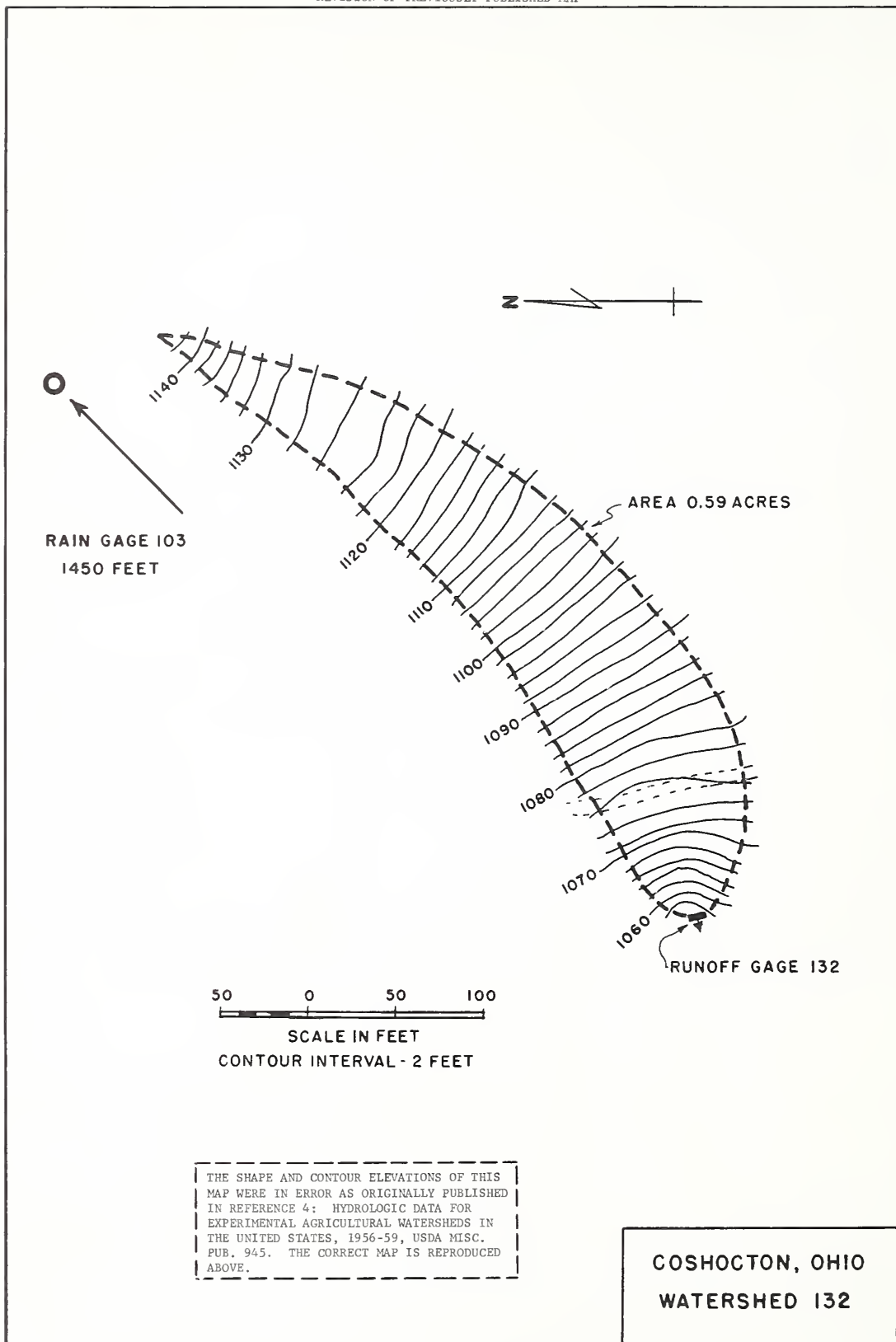
COSHOCTON, OHIO WATERSHED 130

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO				WATERSHED 131				26.07		
						AREA—2.21 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/ Q	2.88 .00	3.37 .00	3.08 .02	1.18 .00	2.66 .00	1.79 .00	2.54 .00	1.97 .00	5.31 .00	2.28 .00	3.01 .00	2.11 .00	32.18 .02		
STA AV2/ (38-62) Q	P Q	2.71 .03	2.45 .02	3.16 .03	3.27 .02	3.87 .01	4.41 .04	4.36 .01	2.87 T	2.61 .01	2.22 T	2.40 T	2.11 T	36.44 .17		
MEAN P 54 YR	3/ P	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	3-12	T	3-12	T	3-12	.01	3-12	.01	3-12	.02	3-12	.02	3-12	.02	3-12	.02
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962	6-12 1957	1.18	6-12 1957	.41	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45
NOTES: Quality of records: Monthly P, excellent; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: Uneven age hardwoods. 1/ Precipitation obtained from rain gage 103. 2/ Precipitation and runoff records began May 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny and Conemaugh series, occur beneath 20 in. to 80 in. of soil. The upper 30% of the watershed is underlain by the massive Lower Freeport sandstone. The remainder is underlain by a thin arenaceous shale and the massive Lower Freeport sandstone which occurs in the lower 30% of the watershed. The rock strata are inclined at approximately 1° to the southwest. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1941 SELECTED RUNOFF EVENT						COSHOCTON, OHIO				WATERSHED 131				25.07		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of May 22, 1941 4/																
4-23	RG 103 T	.00	5-22	RG	100 5/		5-22	1600	.000	.00						
4-28	.03	.00		1546	.00	.00		1615	T	T						
5-7	.43	.00		1554	1.20	.10		1617	.005	T						
5-8	.60	T		1602	.15	.11		1621	.018	T						
5-9	.18	.00		1606	1.65	.22		1624	.026	T						
5-15	.03	.00		1610	2.10	.36		1627	.030	T						
5-16	1.02	T		1617	.77	.45		1631	.035	.01						
5-17	1.73	.08		1621	2.40	.61		1634	.030	.01						
5-22	6/1.24	7/ T		1624	1.00	.66		1639	.039	.01						
				1636	.00	.66		1641	.059	.01						
				1642	1.30	.79		1643	.088	.01						
				1644	4.50	.94		1645	.114	.02						
				1646	3.60	1.06		1646	.128	.02						
				1650	.30	1.08		1647	.135	.02						
				1728	.00	1.08		1649	.139	.03						
				1731	.40	1.10		1650	.135	.03						
				1900	.00	1.10		1651	.114	.03						
				1904	.60	1.14		1653	.128	.04						
				1910	.10	1.15		1657	.114	.04						
				1925	.04	1.16		1702	.088	.05						
				2000	.02	1.17		1708	.070	.06						
								1715	.054	.07						
								1725	.035	.07						
								1730	.035	.08						
								1740	.026	.08						
								1750	.018	.09						
								1800	.011	.09						
								1810	.008	.09						
								1820	.005	.09						
								1845	T	.09						
								1955	.000	.09						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.2284. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.7-5. 4/ SUBSTITUTED FOR JUNE 28, 1940, EVENT, WHOSE RUNOFF PEAK WAS SLIGHT, 0.0853 IN/HR. 5/ NO INTENSITY RECORD FOR RAIN GAGE 103. 6/ RAIN ENDING 1500. 7/ RUNOFF PRIOR TO 1600.																

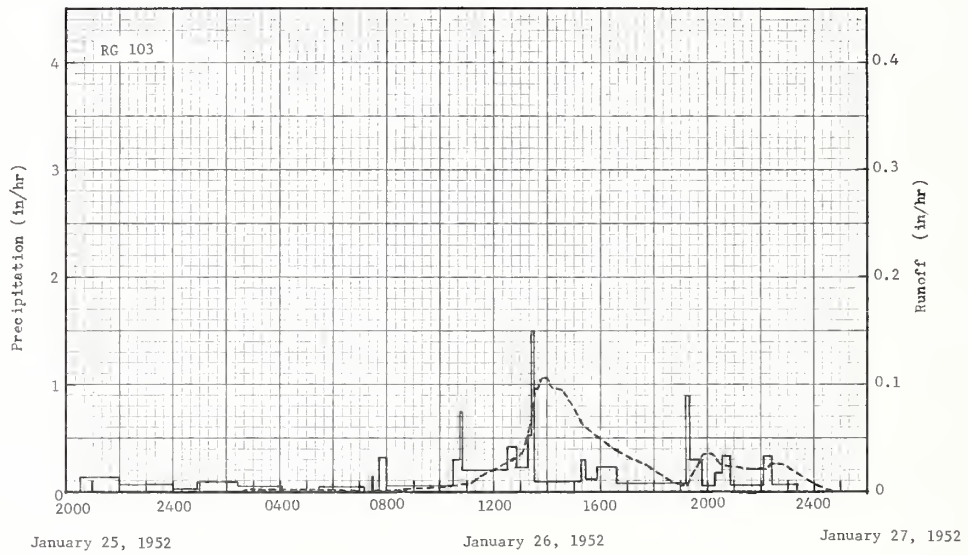


COSHOCTON, OHIO WATERSHED 131

REVISION OF PREVIOUSLY PUBLISHED MAP



MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO				WATERSHED 132				26.08		
							AREA—0.59 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P1/	2.88	3.37	3.08	1.18	2.66	1.79	2.54	1.97	5.31	2.28	3.01	2.11	32.18			
	C	.25	.63	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.30			
STA AV2/	P	3.44	2.73	2.90	3.40	3.27	3.93	4.72	2.42	2.68	2.01	2.55	2.26	36.31			
(48-62)	Q	.24	.17	.13	.25	.06	.16	.01	T	.02	T	.00	.01	1.05			
MEAN P 3/		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
54 YR																	
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	2-26	.05	2-23	.05	2-26	.09	2-23	.16	2-23	.24	2-23	.27	2-25	.35	2-23	.63	
MAXIMUMS FOR PERIOD OF RECORD																	
1948 to	6-12	2.00E	4-25	.73	4-25	.99	4-25	1.37	4-25	1.52	1-21	2.00E	1-21	2.00E	4-21	2.08	
1962	1957		1961		1961		1961		1961		1959		1959		1961		
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: Uneven-age hardwoods. 1/ Rain gage 103. 2/ Precipitation and runoff records began May 1948. Part-year amounts for 1948 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																	
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																	
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 36 in. to 80 in. of soil. A series of unnamed silty to clayey shales underlie the entire watershed. The rock strata are inclined to the west at approximately 1°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																	
1952 SELECTED RUNOFF EVENT							COSHOCTON, OHIO				WATERSHED 132				26.08		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)							
	RG 103			Event of January 25-27, 1952 4/													
				RG	103												
12-29	TS	.00	1-25	2031	.00	.00	1-26	0238	.0000	.00							
12-30	.28	.00		2159	.14	.21		0240	.0012	T							
12-31	.03	.00		2400	.07	.35		0540	.0012	T							
1-1	.09	.00						0700	.0000	T							
1-2	.37	.00	1-26	0055	.03	.38		0730	.0000	T							
1-3	.06	.00		0223	.09	.51		0840	.0028	.01							
1-4	.11N	.00		0404	.05	.58		1110	.0094	.02							
1-6	TS	.00		0528	.00	.58		1140	.0163	.02							
1-8	TS	.00		0712	.05	.67		1304	.0354	.05							
1-10	.04S	.00		0728	.00	.67		1330	.0778	.07							
1-13	T	.00		0732	.15	.68		1334	.0960	.08							
1-15	.35	.00		0743	.00	.68		1340	.0960	.09							
1-16	.04	.00		0800	.32	.77		1350	.106	.10							
1-17	.61	.00		1028	.05	.90		1400	.106	.12							
1-19	.36	.00		1044	.30	.98		1410	.0960	.14							
1-20	.34	.07		1048	.75	1.03		1430	.0960	.17							
1-22	.35	.00		1232	.20	1.38		1520	.0616	.24							
1-23	TS	.00		1252	.42	1.52		1626	.0413	.30							
1-24	TS	.00		1318	.23	1.62		1740	.0252	.34							
Watershed conditions: Uneven-age stand of hardwoods, good woodland management, no grazing. Trees up to 70 ft high; shrubs 6 in. high.				1326	.52	1.69		1840	.0094	.36							
				1332	1.50	1.84		1914	.0067	.36							
				1516	.09	2.00		1940	.0252	.37							
				1524	.30	2.04		1950	.0354	.38							
				1552	.11	2.09		2010	.0354	.39							
				1636	.23	2.26		2030	.0252	.40							
				1912	.07	2.43		2150	.0205	.43							
				1920	.90	2.55		2210	.0205	.44							
				1948	.30	2.69		2220	.0252	.44							
				2014	.05	2.71		2250	.0252	.46							
				2032	.17	2.76		2400	.0067	.47							
				2052	.33	2.87		1-27	0040	.0000							
				2205	.06	2.94											
				2225	.33	3.05											
				2231	.06	3.11											
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.5949. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.8-2. 4/ SUBSTITUTED FOR EVENT OF JUNE 28, 1940; WATERSHED NOT IN OPERATION IN 1940.																	

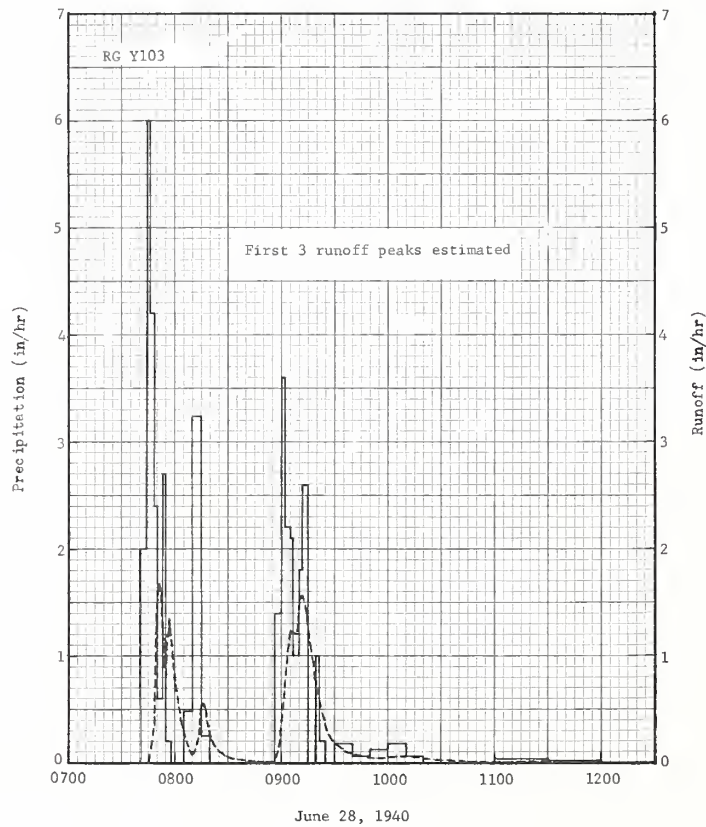


COSHOCTON, OHIO WATERSHED 132

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO		WATERSHED 123		26.10						
						AREA—1.37 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	2.91	3.65	3.11	1.45	2.76	2.01	2.64	2.08	5.40	2.29	3.15	2.16	33.61		
	Q	.03	.99	.46	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.48		
STA	AV2/ P	2.79	2.57	3.22	3.47	3.92	4.69	4.40	2.93	2.63	2.37	2.50	2.26	37.75		
(39-62)	Q	.42	.36	.33	.28	.15	.37	.15	.09	.06	.02	.01	.15	2.39		
MEAN P	3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	3-12	.21	3-12	.16	3-12	.24	3-12	.31	2-23	.39	2-23	.39	2-23	.54	2-23	.92
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-12	5.97	6-12	1.37	6-12	1.48	6-28	1.51	1-21	1.84	1-21	2.33	1-21	2.33	1-21	2.33
1962	1957		1957		1957		1957		1959		1959		1959		1959	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Wheat to meadow, improved practice. 1/ Precipitation obtained from rain gage Y103. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 50 in. to 80 in. of soil. Silty shale underlie the upper 60% of the watershed. Arenaceous sandstone and silty to clayey shales underlie the lower 35% of the watershed with 5% of the watershed at the watershed outlet underlain by a single bed of massive sandstone. The Lower Kittanning coal and clay occur 10 ft below the watershed outlet at the base of the sandstone. The rock strata are inclined approximately 3/4° to the east. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCOTON, OHIO		WATERSHED 123		26.10						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
			Event of June 28, 1940													
RG Y103			RG Y103													
5-29	.42	T	6-28	0741	.00	.00	6-28	0745	.0000	.00						
5-30	1.03	.02		0744	2.00	.10		0748	.347	.01						
6-7	.09	.00		0746	6.00	.30		0750	1.60 E	.04						
6-8,9	.72	T		0748	4.20	.44		0751	1.68 E	.07						
6-10	.80	.07		0750	2.40	.52		0752	1.50 E	.10						
6-11	.32	.01		0753	.60	.55		0755	.818 E	.16						
6-12	.59	.05E		0755	2.70	.64		0757	1.36 E	.20						
6-14	.11	.00		0758	.20	.65		0800	.840 E	.26						
6-18	1.50	.32		0805	.00	.65		0804	.317 E	.30						
6-19	T	.00		0810	.48	.69		0809	.0717	.31						
6-23	.77	.04		0815	3.24	.96		0813	.290	.32						
6-24	.15	.00		0820	.24	.98		0815	.534	.33						
6-25	.21	T		0857	.00	.98		0816	.553	.34						
6-26	.13	.00		0900	1.40	1.05		0817	.497	.35						
				0902	3.60	1.17		0822	.161	.38						
				0905	2.20	1.28		0828	.0594	.39						
				0907	2.10	1.35		0840	.0145	.39						
				0910	1.00	1.40		0853	.0013	.40						
				0912	1.80	1.46		0900	.263	.40						
				0915	2.60	1.59		0905	1.23	.47						
				0919	.00	1.59		0908	1.20	.53						
				0922	1.00	1.64		0911	1.54	.60						
				0925	.20	1.65		0912	1.56	.63						
				0930	.00	1.65		0913	1.43	.65						
				0940	.18	1.68		0918	.793	.74						
				0950	.06	1.69		0923	.426	.80						
				1000	.12	1.71		0928	.203	.82						
				1010	.18	1.74		0936	.100	.84						
				1020	.06	1.75		0948	.0483	.86						
Watershed conditions: In wheat of a corn, wheat, meadow, rotation (prevailing practice). Wheat 30 in. high, grass and clover 3 in. high, density of cover 60%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.3814. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.10-6.																

1940 SELECTED RUNOFF EVENT			COSHOCTON, OHIO				WATERSHED 123		26.10	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
				<u>Event of June 28, 1940 — Continued</u>						
			6-28	1100	.00	1.75	6-28	0953	.0383	.86
				1130	.04	1.77		0957	.0383	.86
				1200	.02	1.78		1005	.0537	.87
								1009	.0537	.87
								1026	.0179	.88
								1050	.0028	.88
								1145	.0000	.88

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.3814.

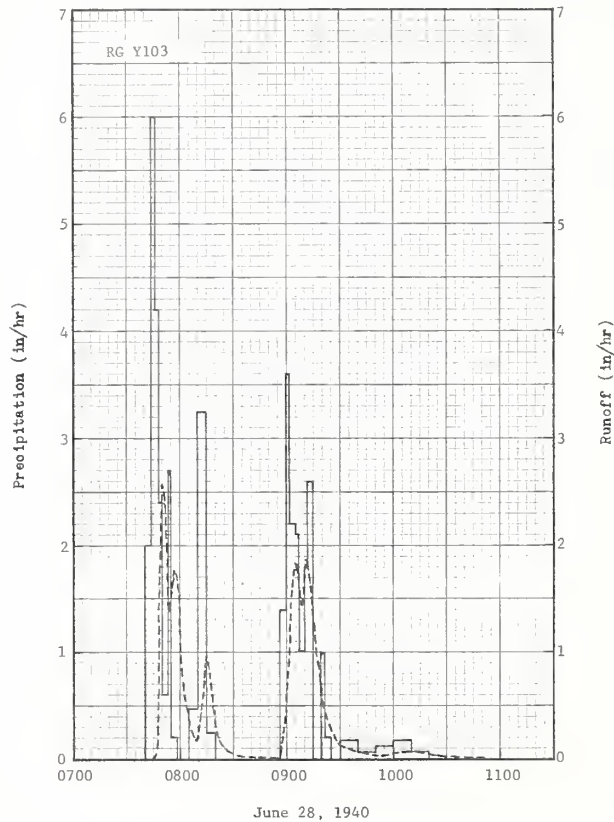


COSHOCTON, OHIO WATERSHED 123

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO				WATERSHED 115				26.11		
						AREA--1.61 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/ Q	2.91 .07	3.65 1.85	3.11 .06	1.45 .00	2.76 .00	2.01 .00	2.64 .00	2.08 .00	5.40 .00	2.29 .00	3.15 .00	2.16 .00	33.61 1.98		
STA AV2/ (39-62)	P Q	2.84 .24	2.50 .26	3.20 .12	3.47 .15	3.92 .18	4.69 .47	4.40 .36	2.93 .19	2.63 .15	2.37 .04	2.50 .02	2.26 .06	37.71 2.24		
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.31	2-23	.23	2-23	.35	2-23	.54	2-23	.83	2-23	.84	2-25	1.50	2-19	1.77
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	6-12 1957	4.12	9-1 1950	1.33	9-1 1950	1.56	9-1 1950	1.58	9-1 1950	1.59	9-1 1950	1.59	9-1 1950	1.59	6-29 1941	2.85
Notes: Quality of records: Monthly P, good; Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Wheat to meadow, prevailing practice. 1/ Rain gage Y103. 2/ Precipitation and runoff records began Apr. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. Silty shales underlie the upper 60% of the watershed. Arenaceous sandstone and silty to clayey shales underlie the lower 35% of the watershed with 5% of the watershed at the watershed outlet underlain by a single bed of massive sandstone. The Lower Kittanning coal and clay occur 10 ft below the watershed outlet at the base of the sandstone. The rock strata are inclined 3/4° to the east. Source of data: James B. Urban, Geologist, ARS. See map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO				WATERSHED 115				26.11		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
RG Y103			RG Y103													
5-29	.42	.06	6-28	0741	.00	.00	6-28	0744	.00	.00						
5-30	1.03	.31		0744	2.00	.10		0746	.0123	.00						
6-7	.09	.00		0746	6.00	.30		0749	1.98	.03						
6-8, 9	.72	.06		0748	4.20	.44		0750	2.57	.07						
6-10	.80	.26		0750	2.40	.52		0751	2.39	.11						
6-11	.32	.10		0753	.60	.55		0754	1.39	.22						
6-12	.59	.28		0755	2.70	.64		0756	1.63	.27						
6-14	.11	.00		0758	.20	.65		0757	1.76	.30						
6-18	1.50	.72		0805	.00	.65		0759	1.56	.36						
6-19	T	.00		0810	.48	.69		0802	.696	.42						
6-23	.77	.23		0815	3.24	.96		0809	.172	.45						
6-24	.15	.00		0820	.24	.98		0812	.439	.47						
6-25	.21	.01		0857	.00	.98		0814	.825	.49						
6-26	.13	.01		0900	1.40	1.05		0815	.973	.51						
Watershed conditions: In wheat of a corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 30 in. high, clover and grass 3 in. high, density of cover 60%.																
				0902	3.60	1.17		0817	.782	.54						
				0905	2.20	1.28		0822	.270	.57						
				0907	2.10	1.35		0827	.0850	.59						
				0910	1.00	1.40		0833	.0252	.59						
				0912	1.80	1.46		0844	.0036	.59						
				0915	2.60	1.59		0856	.0003	.59						
				0919	.00	1.59		0900	.540	.60						
				0922	1.00	1.64		0903	1.69	.66						
				0925	.20	1.65		0904	1.84	.69						
				0930	.00	1.65		0905	1.84	.72						
				0940	.18	1.68		0908	1.43	.81						
				0950	.06	1.69		0910	1.69	.86						
				1000	.12	1.71		0911	1.87	.89						
				1010	.18	1.74		0913	1.63	.95						
				1020	.06	1.75		0920	.505	1.05						
								0928	.145	1.09						
								0943	.0610	1.11						
								0954	.0326	1.12						
								1005	.0610	1.13						
								1008	.0665	1.13						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6234. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.11-6.																

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 115 26.11			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 28, 1940 — Continued							6-28	1012	.0610	1.13
								1021	.0252	1.14
								1029	.0074	1.14
								1052	.0000	1.14

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6234.



COSHOCOTON, OHIO WATERSHED 115

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO		WATERSHED 127		26.12				
						AREA—1.65 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/	2.91	3.65	3.11	1.45	2.76	2.01	2.64	2.08	5.40	2.29	3.15	2.16	33.61
	Q	.36	1.28	.80	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.44
STA AV2/	P	3.42	2.86	2.92	3.68	3.37	4.09	4.75	2.70	2.68	2.08	2.62	2.37	37.54
(49-62)	Q	1.01	.71	.44	.43	.10	.36	.14	.09	.11	T	.06	.35	3.80
MEAN P 3/		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80
54 YR														

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1952	2-23	.21E	3-12	.16E	3-12	.24E	3-12	.31E	2-23	.39E	2-23	.39E	2-23	.54E	2-23	.92E

MAXIMUMS FOR PERIOD OF RECORD														
1949 TO	6-12	3.12	9-1	1.33	9-1	1.48	6-12	1.49	1-26	1.97	1-26	2.65	1-25	2.85
1962	1957		1950		1950		1957		1952		1952		1952	

Notes: Quality of records: Monthly P, excellent; Q, good; annual maximum discharges and volumes, good. Watershed conditions: Wheat to meadow, improved practice plus mulch tillage. 1/ Rain gage Y103. 2/ Precipitation and runoff records began May 1949. Part-year amounts for 1949 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

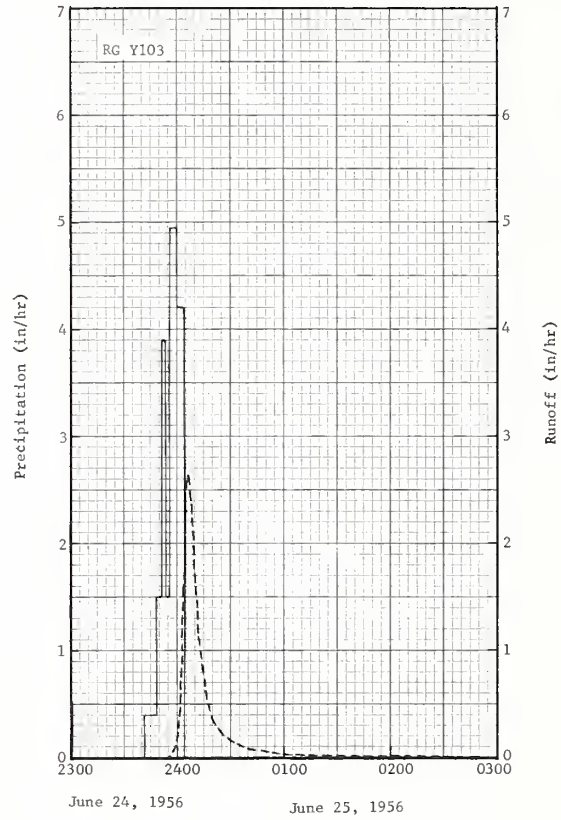
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 50 in. to 80 in. of soil. Silty shales underlie the upper 60% of the watershed. Arenaceous sandstone and silty to clayey shale underlie the lower 35% of the watershed with 5% of the watershed at the watershed outlet underlain by a single bed of massive sandstone. The Lower Kittanning coal and clay occur 5 ft below the watershed outlet at the base of the sandstone. The rock strata are inclined approximately 3/4° to the east. Source of data: James B. Urban, Geologist, ARS. See geologic map on p.26.30-31.

1956 SELECTED RUNOFF EVENT						COSHOCKTON, OHIO		WATERSHED 127		26.12	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 24-25, 1956 4/											
	RG Y103			RG	Y103						
5-26	.13	.00	6-24	2342	.00	.00	6-24	2356	.0000	.00	
5-27	1.53	.01		2348	.40	.04		2358	.0680	T	
5-29	.20	.00		2352	1.50	.14		2400	.178	.01	
5-31	1.09	.12		2354	3.90	.27					
6-1	.00	T		2356	1.50	.32	6-25	0002	.435	.02	
6-2	.09	.00		2400	4.95	.65		0003	.921	.03	
6-3	.71	.05						0004	1.76	.05	
6-13	.10	.00	6-25	0004	4.20	.93		0005	2.30	.08	
6-16	.05	.00		5/		.97		0006	2.64	.12	
6-17	.05	.00						0008	2.22	.20	
6-18	.70	.00						0009	1.90	.24	
6-20	.14	.00						0010	1.69	.27	
6-21	.26	.00						0012	1.13	.32	
6-23	.30	.00						0014	.825	.35	
6-24	6/.91	7/.04						0016	.614	.37	
								0018	.435	.39	
								0020	.345	.40	
								0024	.243	.42	
								0030	.150	.44	
								0040	.0807	.46	
								0050	.0462	.47	
								0104	.0210	.48	
								0130	.0063	.49	
								0210	.0013	.49	
								0250	.0000	.49	

Watershed conditions: In second-year meadow of corn, wheat, meadow, meadow rotation (improved practice). Three tons per acre hay removed June 3, density of cover 100%.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6637. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.12-5. 4/ SUBSTITUTED FOR EVENT OF JUNE 28, 1940; WATERSHED NOT IN OPERATION IN 1940. 5/ NO RECORD AFTER 0004. 6/ RAIN ENDING 1928. 7/ RUN-OFF PRIOR TO 2356.

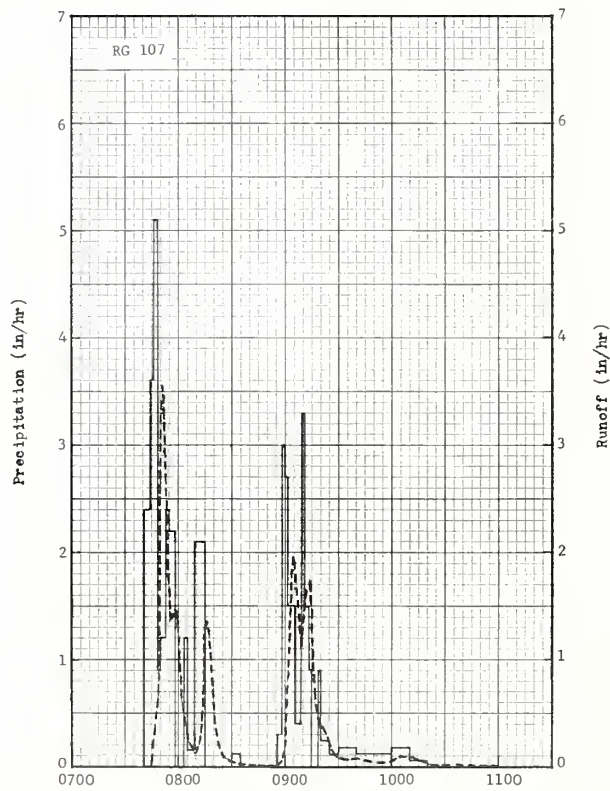


COSHOCTON, OHIO WATERSHED 127

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCKTON, OHIO				WATERSHED 109				26.13			
							AREA--1.69 ACRES											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1962	P1/ Q	2.79 .31	3.38 2.08	2.85 .47	1.35 .00	2.61 .00	1.66 .00	2.47 .00	1.89 .00	5.47 .00	2.23 .00	2.90 .00	2.16 .00	31.76 2.86				
STA AV2/ (38-62)	P Q	2.69 .08	2.46 .18	3.18 .05	3.44 .05	3.92 .13	4.67 .34	4.50 .26	2.89 .19	2.66 .06	2.32 .02	2.42 T	2.14 .02	37.29 1.38				
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																		
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962	2-23	.44	2-23	.34	2-23	.53	2-23	.78	2-23	1.13	2-23	1.14	2-23	1.14	2-19	2.00		
MAXIMUMS FOR PERIOD OF RECORD																		
1939 TO 1962	5-17 1941	4.34E	6-29 1941	.82E	6-28 1940	1.09	5-22 1941	1.30E	8-27 1940	1.31	8-27 1940	1.52	8-25 1940	1.65	5-16 1941	2.14E		
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: wheat to meadow, improved practice. 1/ Rain gage Y102. 2/ Precipitation and runoff records began Nov. 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																		
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																		
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																		
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The Lower Freeport sandstone horizon, an interbedded sequence of silty to arenaceous shales and thinbedded sandstone underlie the watershed. The Middle Kittanning coal and clay aquifer occurs approximately 18 ft beneath the watershed outlet. Rock strata dip to at less than 1° to the southwest. This watershed lies on the crest of the Cambridge Arch. Dip of the rock strata is due to the general plunge of the major rock structure. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																		
1940 SELECTED RUNOFF EVENT							COSHOCKTON, OHIO				WATERSHED 109				26.13			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF											
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)								
			Event of June 28, 1940															
			RG	Y102	RG	107 4/												
5-29, 30	1.23	.17	6-28	0741	.00	.00	6-28	0745	.0000	.00								
6-7	.07	.00		0744	2.40	.12		0748	.657	.01								
6-8	.29	T		0746	3.60	.24		0750	2.67	.06								
6-9	.31	.02		0748	5.10	.41		0751	3.55	.11								
6-10	.90	.38		0750	.90	.44		0752	3.34	.17								
6-11	.42	.10		0753	1.20	.50		0754	1.89	.26								
6-12	.64	.25		0755	2.40	.58		0756	1.38	.31								
6-14	.07	.00		0758	2.20	.69		0758	1.48	.36								
6-18	1.54	.60		0803	.00	.69		0759	1.41	.38								
6-19	T	.00		0805	1.20	.73		0802	.634	.43								
6-22	.09	.00		0809	.15	.74		0805	.259	.45								
6-23	.82	.30		0815	2.10	.95		0809	.129	.47								
6-24	.04	.00		0830	.00	.95		0813	.456	.48								
6-25	.24	.04		0835	.12	.96		0815	1.27	.51								
6-26	14	.02		0856	.00	.96		0816	1.36	.53								
				0858	.30	.97		0817	1.24	.55								
				0900	3.00	1.07		0820	.541	.60								
				0902	2.70	1.16		0824	.113	.62								
				0906	1.50	1.26		0828	.0450	.62								
				0909	.40	1.28		0836	.0137	.62								
				0911	3.30	1.39		0856	.0026	.63								
				0913	1.50	1.44		0900	.155	.63								
				0915	.90	1.47		0903	1.78	.68								
				0918	.00	1.47		0904	1.97	.71								
				0920	.90	1.50		0905	1.93	.74								
				0925	.24	1.52		0909	1.10	.84								
				0930	.12	1.53		0912	1.61	.90								
				0940	.18	1.56		0913	1.75	.93								
				1000	.12	1.60		0914	1.58	.96								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.7041. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.13-4. 4/ NO INTENSITY RECORD FOR Y102.																		

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 109		26.13	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			<u>Event of June 28, 1940—Continued</u>							
			6-28	1010	.18	1.63	6-28	0917	.634	1.01
				1020	.06	1.64		0920	.350	1.04
								0921	.379	1.04
								0925	.204	1.06
								0929	.0915	1.07
								0935	.0663	1.08
								0939	.0786	1.08
								0940	.0786	1.09
								0945	.0552	1.09
								0954	.0239	1.10
								1002	.0606	1.10
								1005	.0915	1.10
								1007	.0915	1.11
								1015	.0499	1.12
								1021	.0204	1.12
								1030	.0062	1.12
								1100	.0000	1.12

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.7041.



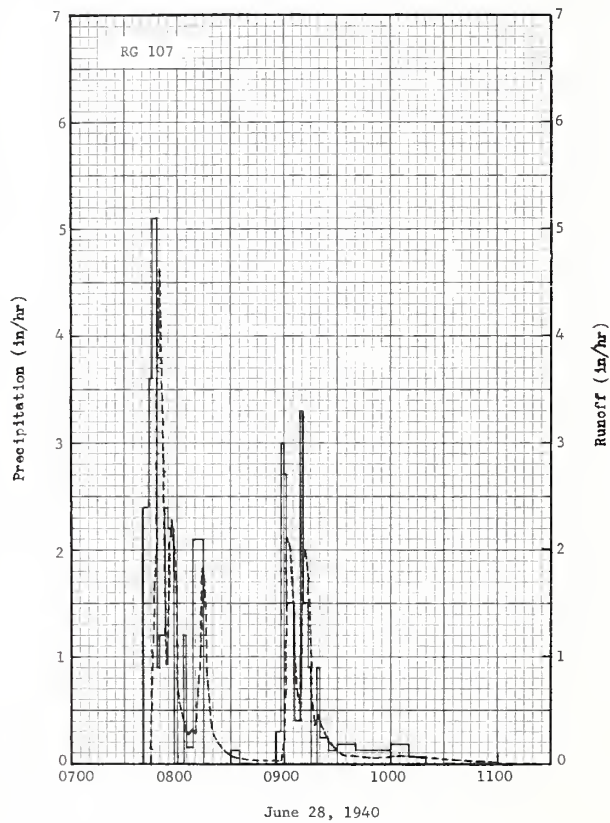
June 28, 1940

COSHOCOTON, OHIO WATERSHED 109

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO				WATERSHED 103				26.14			
						AREA—0.65 ACRE											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962	P1/ Q	2.83 .39	3.37 2.38	3.10 .41	1.15 .01	2.46 .00	1.69 .00	2.28 .00	1.82 .00	5.61 .00	2.21 T	2.96 .21	2.09 .00	31.57 3.40			
STA AV2/ (39-62)	P Q	2.68 .38	2.32 .35	3.10 .39	3.30 .29	3.70 .17	4.44 .46	4.29 .32	2.85 .16	2.63 .16	2.23 .03	2.35 .03	2.12 .11	36.01 2.85			
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1962		2-23	.52	2-23	.40	2-23	.60	2-23	1.03	2-23	1.40	2-23	1.42	2-23	1.86	2-19	2.29
MAXIMUMS FOR PERIOD OF RECORD																	
1939 TO 19 62	7-23 1940	4.72	9-1 1950	1.95	9-1 1950	2.60	9-1 1950	2.62	9-1 1950	2.62	9-1 1950	2.62	8-31 1950	2.63	8-26 1940	2.76	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Meadow to corn to wheat, improved practice. 1/ Rain gage 107. 2/ Precipitation and runoff records began April 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																	
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																	
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. Silty and arenaceous shales underlie the upper 60% of the watershed. The Middle Kittanning coal and clay outcrop beneath the soil in the lower third of the watershed where the clay is underlain by claystone and arenaceous shale. The Middle Kittanning coal-clay aquifer is inclined to the southeast at approximately 1°. A perched water table is present in the coal. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																	
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO				WATERSHED 103				26.14			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)							
	RG 107			Event of June 28, 1940													
				RG	107												
5-29	.43	.10	6-28	0741	.00	.00	6-28	0745	.0000	.00							
5-30	.86	.21		0744	2.40	.12		0748	2.23	.03							
6-7	.12	.00		0746	3.60	.24		0749	4.10	.08							
6-8, 9	.52	.00		0748	5.10	.41		0750	4.62	.16							
6-10	.75	.30E		0750	.90	.44		0751	3.77	.23							
6-11	.35	.17		0753	1.20	.50		0754	.949	.34							
6-12	.57	.30		0755	2.40	.58		0756	1.79	.38							
6-14	.06	.00		0758	2.20	.69		0757	2.29	.41							
6-15	.01	.00		0803	.00	.69		0758	2.00	.45							
6-18	1.46	.95		0805	1.20	.73		0801	.627	.51							
6-23	.83	.35		0809	.15	.74		0806	.279	.54							
6-24	.06	.00		0815	2.10	.95		0808	.317	.55							
6-25	.19	.02		0830	.00	.95		0810	.298	.56							
6-29	.15	.02		0835	.12	.96		0812	.627	.57							
				0856	.00	.96		0813	1.10	.59							
				0858	.30	.97		0814	1.83	.61							
				0900	3.00	1.07		0815	1.74	.64							
				0902	2.70	1.16		0817	.879	.68							
				0906	1.50	1.26		0819	.337	.70							
				0909	.40	1.28		0830	.0598	.73							
				0911	3.30	1.39		0858	.0253	.75							
				0913	1.50	1.44		0900	.212	.75							
				0915	.90	1.47		0901	.812	.76							
				0918	.00	1.47		0902	2.11	.78							
				0920	.90	1.50		0903	2.00	.82							
				0925	.24	1.52		0905	1.31	.87							
				0930	.12	1.53		0908	.572	.92							
				0940	.18	1.56		0911	1.68	.96							
				1000	.12	1.60		0912	2.00	.99							
				1010	.18	1.63		0913	1.68	1.02							
				1020	.06	1.64		0915	.746	1.06							
								0917	.357	1.08							
								0919	.446	1.09							
								0927	.168	1.13							
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.65542. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.14-5.																	

1940			SELECTED RUNOFF EVENT				COSHOCOTON, OHIO			WATERSHED 103			26.14	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)				
Event of June 28, 1940 — Continued														
							6-28	0933	.0865	1.14				
								0938	.0865	1.15				
								0950	.0447	1.16				
								0958	.0447	1.17				
								1003	.0771	1.18				
								1010	.0771	1.18				
								1100	.0000	1.20				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.65542.

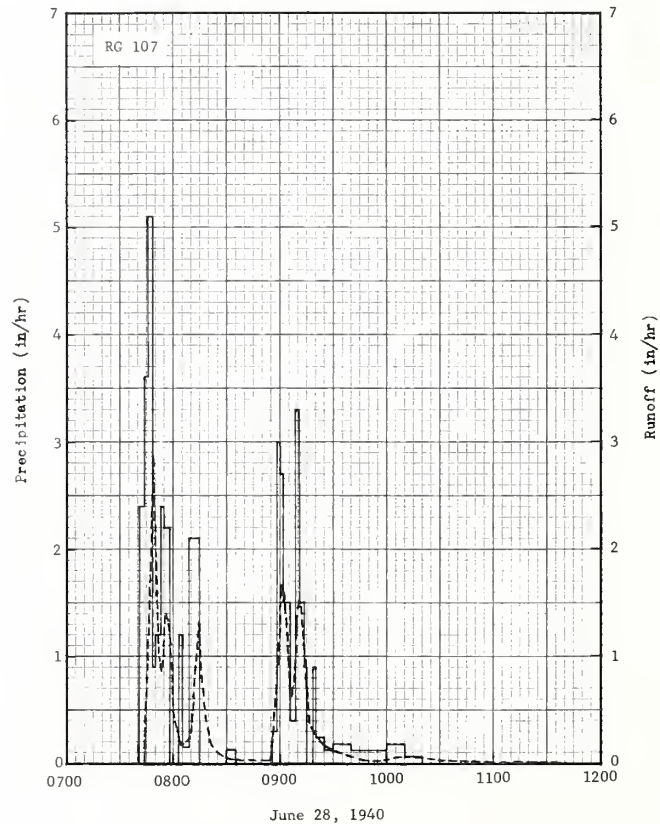


COSHOCOTON, OHIO WATERSHED 103

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO						WATERSHED 110				26.15			
						AREA—1.27 ACRES													
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL					
1962	P1/ Q	2.83 .00	3.37 .76	3.10 .35	1.15 .00	2.46 .00	1.69 .00	2.28 .00	1.82 .02	5.61 .16	2.21 .03	2.96 .19	2.09 .00	31.57 1.51					
STA AV2/ (39-62)	P Q	2.68 .27	2.32 .25	3.10 .18	3.30 .18	3.70 .15	4.44 .41	4.29 .31	2.85 .13	2.63 .17	2.23 .04	2.35 .02	2.12 .11	36.01 2.22					
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80					
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																			
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS				
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME			
1962	2-23	.30	2-23	.22	2-23	.28	2-23	.42	2-23	.46	2-24	.46	2-24	.61	2-23	.76			
MAXIMUMS FOR PERIOD OF RECORD																			
1939 TO	7-28	4.44	9-1	2.24	9-1	3.16	9-1	3.19	9-1	3.19	9-1	3.20	8-30	3.20	8-30	3.44			
1962	1950		1950		1950		1950		1950		1950		1950		1950				
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Meadow to corn to wheat, prevailing practice. 1/ Rain gage 107. 2/ Precipitation and runoff records began April 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																			
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																			
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																			
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. Silty and arenaceous shales underlie the upper 60% of the watershed. The Middle Kittanning coal and clay outcrop beneath the soil in the lower third of the watershed where the clay is underlain by claystone and arenaceous shale. The Middle Kittanning coal-clay aquifer is inclined to the southeast at approximately 1°. A perched water table is present in the coal. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																			
1940 SELECTED RUNOFF EVENT						COSHOCKTON, OHIO						WATERSHED 110				26.15			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF												
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)									
	RG 107			Event of June 28, 1940															
				RG	107														
5-29	.42	.09	6-28	0741	.00	.00	6-28	0744	.0000	.00									
5-30	.86	.24		0744	2.40	.12		0747	1.51	.02									
6-7	.12	.00		0746	3.60	.24		0748	2.87	.06									
6-8, 9	.52	.00		0748	5.10	.41		0749	2.28	.10									
6-10	.75	.26		0750	.90	.44		0751	1.51	.16									
6-11	.35	.11		0753	1.20	.50		0753	.858	.20									
6-12	.57	.26		0755	2.40	.58		0755	1.20	.23									
6-14	.06	.00		0758	2.20	.69		0756	1.40	.25									
6-15	.01	.00		0803	.00	.69		0758	1.11	.29									
6-18	1.46	.65		0805	1.20	.73		0800	.459	.32									
6-23	.83	.26		0809	.15	.74		0804	.163	.34									
6-24	.06	.00		0815	2.10	.95		0809	.219	.35									
6-25	.19	.01		0830	.00	.95		0811	.459	.36									
6-26	.15	.01		0835	.12	.96		0813	1.08	.39									
				0856	.00	.96		0814	1.33	.41									
				0858	.30	.97		0816	.755	.44									
				0900	3.00	1.07		0822	.163	.48									
				0902	2.70	1.16		0830	.0317	.49									
				0906	1.50	1.26		0854	.0123	.50									
				0909	.40	1.28		0900	1.27	.52									
				0911	3.30	1.39		0901	1.66	.54									
				0913	1.50	1.44		0902	1.58	.57									
				0915	.90	1.47		0905	.804	.63									
				0918	.00	1.47		0907	.619	.65									
				0920	.90	1.50		0910	1.47	.70									
				0925	.24	1.52		0911	1.51	.72									
				0930	.12	1.53		0912	1.27	.74									
				0940	.18	1.56		0917	.374	.80									
				1000	.12	1.60		0924	.173	.83									
Continued on next page																			
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.2806. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.14-5.																			

1940			SELECTED RUNOFF EVENT				COSHOCOTON, OHIO				WATERSHED 110		26.15	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)				
				<u>Event of June 28, 1940 — Continued</u>										
			6-28	1010	.18	1.63	6-28	0950	.0273	.86				
				1020	.06	1.64		0957	.0273	.87				
								1005	.0465	.87				
								1013	.0465	.88				
								1030	.0156	.89				
								1145	.0000	.89				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.2806.

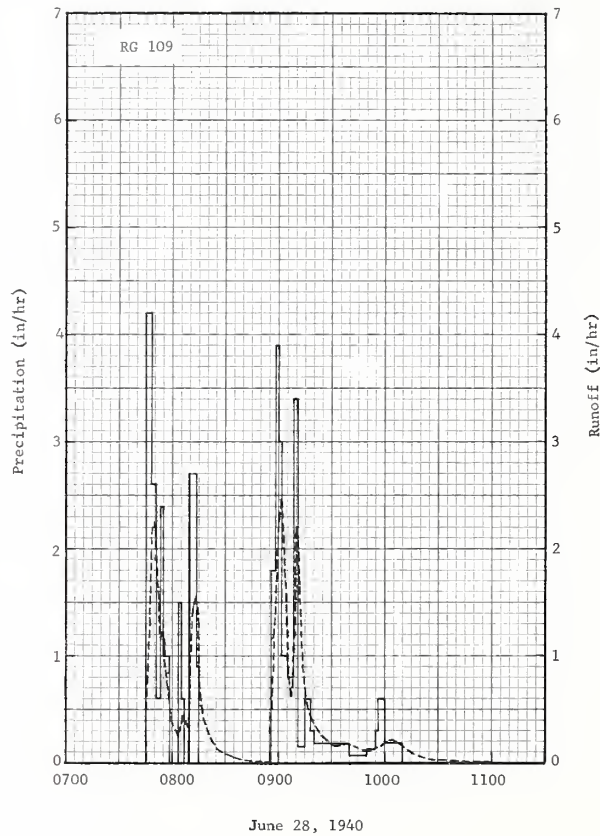


COSHOCOTON, OHIO WATERSHED 110

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 113		26.16						
						AREA—1.45 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P1	2.99	3.46	3.12	1.29	2.74	2.31	2.61	1.63	5.49	2.26	3.06	2.09	33.05			
Q	.32	2.17	.23	.00	.00	.00	.00	.00	.00	.00	.01	.00	2.73			
STA AV2/ P	2.74	2.42	3.14	3.30	3.96	4.57	4.15	2.91	2.72	2.30	2.42	2.20	36.83			
(39-62) Q	.27	.40	.15	.18	.14	.41	.17	.21	.09	.05	.02	.07	2.16			
MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.44	2-23	.34	2-23	.52	2-23	.71	2-23	1.20	2-23	1.21	2-23	1.75	2-19	2.07
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	6-12 1957	3.77	9-1 1950	1.03	4-25 1961	1.20	6-28 1957	1.35	6-28 1957	1.35	1-20 1959	1.49	2-23 1962	1.75	8-26 1940	2.18
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Second-year meadow, improved practice. 1/ Rain gage 109. 2/ Precipitation and runoff records began Sept. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, underlie 30 in. to 80 in. of soil. Unnamed sandstone and arenaceous shale occur in the upper 70% of the watershed. This sequence is underlain by the Lower Kittanning coal and clay and a sequence of clayey shale. A perched water table is present in the coal and overlying sandstone. The rock strata are inclined approximately 1° to the west. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 113		26.16						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
RC 109			Event of June 28, 1940													
			RC 109													
5-29	.28)	.40	6-28	0745	.00	.00	6-28	0745	.0000	.00						
5-30	.93)			0748	4.20	.21		0747	1.32	.02						
6-7	.08			0751	2.60	.34		0748	2.20	.05						
6-8	.29			0753	.60	.36		0749	2.25	.08						
6-9	.22	.01		0755	2.40	.44		0750	1.92	.12						
6-10	.64	.27		0758	1.00	.49		0753	1.16	.19						
6-11	.44	.22		0803	.00	.49		0754	1.22	.22						
6-12	.76	.45		0805	1.50	.54		0755	1.14	.24						
6-14	.08	.00		0807	.60	.56		0757	.749	.27						
6-15	.08	.00		0809	.00	.56		0759	.419	.29						
6-18	1.48	.92		0813	2.70	.74		0803	.237	.31						
6-23	.84	.35		0815	.90	.77		0806	.452	.33						
6-24	.05	.00		0856	.00	.77		0808	.328	.33						
6-25	.20	.04		0858	1.80	.83		0812	1.45	.38						
Watershed conditions: In wheat of a corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 30 in. high; clover and weeds 3 in. high; density of cover 60%.	.16	.03		0900	3.90	.96		0813	1.55	.40						
				0902	3.00	1.06		0814	1.35	.43						
				0905	1.00	1.11		0817	.487	.47						
				0908	.80	1.15		0825	.126	.50						
				0911	3.40	1.32		0834	.0408	.52						
				0915	.15	1.33		0842	.0137	.52						
				0918	.60	1.36		0855	.0012	.52						
				0920	.30	1.37		0900	2.29	.55						
				0940	.18	1.43		0901	2.47	.59						
				0950	.06	1.44		0902	2.12	.63						
				0955	.12	1.45		0904	1.32	.69						
				0957	.30	1.46		0907	.620	.73						
				1000	.60	1.49		0909	1.32	.76						
				1010	.18	1.52		0910	2.20	.79						
								0912	1.59	.86						
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.4621. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.16-5.																

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 113				26.16	
ANTECEDENT CONOITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
			Event of June 28, 1940—continued				6-28	0915	.600	.91		
								0924	.248	.97		
								0933	.152	1.00		
								0937	.171	1.01		
								0952	.102	1.04		
								1004	.213	1.07		
								1016	.0805	1.10		
								1027	.0278	1.11		
								1100	.0000	1.11		
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS MULTIPLY BY 1.48												

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.4621.

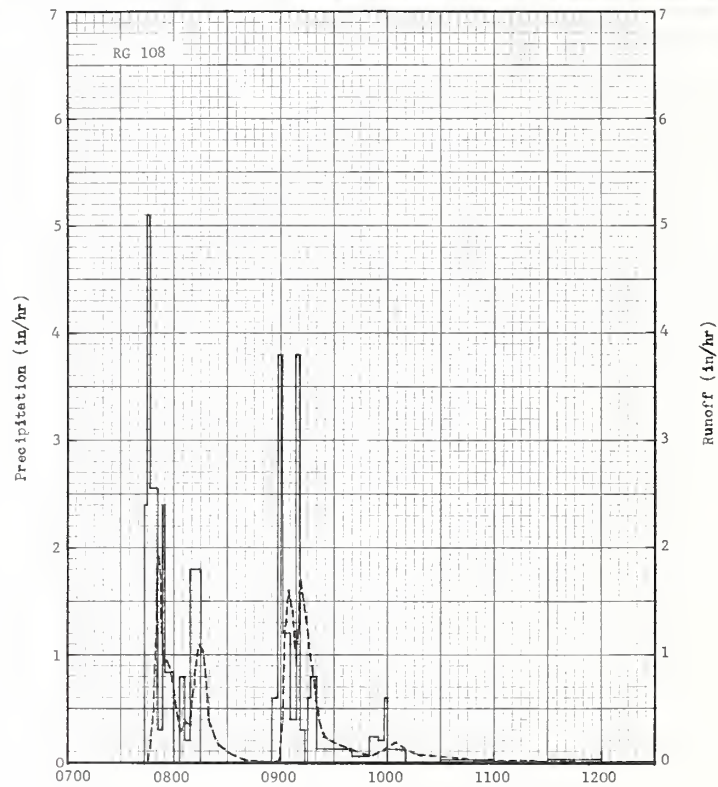


COSHOCOTON, OHIO WATERSHED 113

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO			WATERSHED 118			2617			
							AREA—1.96 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1961	P1/	.67	4.15	3.56	6.83	2.10	3.12	5.41	1.69	1.23	2.21	3.14	2.64	36.75		
	Q	.00	.38	1.04	1.89	.01	.01	.07	.00	.00	.00	.00	.00	3.40		
1962	P2/	2.94	3.59	3.11	1.19	2.54	1.87	2.54	1.64	5.62	2.20	3.07	2.16	32.47		
	STA AVG Q	.11	1.94E	.03	.00	.00	.00	.00	.01	.01	T	.06	.00	2.16		
	P3/	2.86	2.49	3.25	3.39	3.92	4.52	4.23	2.94	2.86	2.23	2.56	2.26	37.51		
	(40-62)Q	.31	.35	.28	.24	.13	.44	.17	.28	.16	.01	.04	.09	2.50		
	MEAN P 4/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
	54 YR															
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.39E	2-23	.34E	2-23	.52E	2-23	.71E	2-23	1.20E	2-23	1.21E	2-23	1.75E	2-22	1.94E
MAXIMUMS FOR PERIOD OF RECORD																
19 40 TO	6-12	3.11	9-1	1.30	9-1	1.59	9-1	1.60	9-1	1.60	1-26	1.77	1-26	2.07	8-26	2.25
19 62	1957		1950		1950		1950		1950		1952		1952		1940	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, poor, Watershed conditions: Second-year meadow, prevailing practice. 1/ Previously published June 1961 Total 1.69 instead of 1.09 in., correction underlined. 2/ Rain gage 108. 3/ Precipitation and runoff records began Jan. 1940. 4/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The upper 50% of the watershed is underlain by a sequence of arenaceous shales, the lower 50% of the watershed is underlain by a sequence of silty to clayey shales. The Putnam Hill limestone aquifer occurs 15 ft beneath the watershed outlet. The rock strata are inclined to the south at approximately 2° Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO			WATERSHED 118			26.17				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RC 108			RG	108											
5-29	.32	.09	6-28	0743	.00	.00	6-28	0745	.0000	.00						
5-30	.88	.26		0745	2.40	.08		0748	.482	.01						
6-7	.09	.00		0747	5.10	.25		0750	1.60	.04						
6-8	.23	.06		0751	2.55	.42		0751	1.93	.07						
6-9	.20	T		0753	.30	.43		0752	1.76	.10						
6-10	.73	.44		0755	2.40	.51		0755	.901	.16						
6-11	.46	.28		0800	.84	.58		0756	.946	.18						
6-12	.76	.50		0803	.00	.58		0758	.815	.21						
6-14	.07	.00		0806	.80	.62		0803	.290	.25						
6-15	.04	.00		0809	.20	.63		0806	.393	.27						
6-18	1.50	.93		0815	1.80	.81		0808	.340	.28						
6-23	.82	.41		0855	.00	.81		0811	.693	.31						
6-24	T	.00		0858	.60	.83		0813	1.04	.33						
6-25	.18	.03		0901	3.80	1.02		0814	1.19	.35						
6-26	.13	.02		0905	1.20	1.10		0816	1.04	.39						
				0908	.40	1.12		0819	.451	.42						
				0911	3.80	1.31		0825	.150	.45						
				0913	.30	1.32		0838	.0238	.47						
				0915	.00	1.32		0859	.0004	.47						
				0917	.60	1.34		0901	.393	.47						
				0920	.80	1.38		0903	1.31	.51						
				0940	.12	1.42		0904	1.60	.53						
				0950	.06	1.43		0905	1.51	.56						
				0955	.24	1.45		0908	.901	.61						
Watershed conditions: In wheat of a corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 30 in. high; clover and grass 3 in. high; density of cover 50%.																
				0958	.20	1.46		0910	1.31	.65						
				1000	.60	1.48		0911	1.70	.68						
				1010	.12	1.50		0912	1.54	.70						
				1030	.00	1.50		0918	.582	.80						
				1100	.02	1.51		0924	.224	.84						
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.9763. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.17-5.																

SELECTED RUNOFF EVENT			COSHOCKTON, OHIO				WATERSHED 118			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of June 28, 1940 - Continued							
			6-28	1130	.00	1.51	6-28	0939	.119	.87
				1200	.02	1.52		0952	.0521	.89
								1005	.185	.91
								1017	.0572	.93
								1052	.0037	.95
								1145	.0000	.95

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.9763.



June 28, 1940

COSHOCKTON, OHIO WATERSHED 113

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCKTON, OHIO		WATERSHED 111					26.18	
							AREA—1.18 ACRES								
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962 P1/ Q	2.99 .24	3.46 1.69	3.12 .37	1.29 .00	2.74 .00	2.31 .00	2.61 .00	1.63 .00	5.49 .00	2.26 .00	3.06 .00	2.09 .00	33.05 2.30		
STA AV2/ P (39-62) Q	2.74 .56	2.42 .61	3.14 .45	3.30 .32	3.96 .17	4.57 .39	4.15 .11	2.91 .06	2.72 .10	2.30 .03	2.42 .03	2.20 .22	36.83 3.05		
MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS														
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL											
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.48	2-23	.37	2-23	.55	2-23	.77	2-23	.99	2-23	.99	2-23	1.33

MAXIMUMS FOR PERIOD OF RECORD														
1939 TO 1962	6-12 1957	3.82	6-12 1957	1.33	6-12 1957	1.42	6-28 1957	1.71	1-21 1959	2.03	1-26 1952	2.60	1-25 1952	2.61
													1-19 1952	3.08

Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Second-year meadow, improved practice plus mulch tillage. 1/ Rain gage 109. 2/ Precipitation and runoff records began Sept. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U.S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 36 in. to 60 in. of soil. The underlying rock strata are a series of unnamed sandstones and arenaceous shales. The Lower Kittanning coal and clay occur approximately 7 ft beneath the watershed outlet. The rock strata are inclined to the southwest at less than $\frac{1}{2}^{\circ}$. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1940 SELECTED RUNOFF EVENT			COSHOCKTON, OHIO				WATERSHED 111				26.18
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 28, 1940											
	RG 109			RG	109						
5-29	.28	T	6-28	0745	.00	.00	6-28	0747	.0000	.00	
5-31	.93	.04		0748	4.20	.21		0750	.276	.01	
6-7	.08	.00		0751	2.60	.34		0751	.336	.01	
6-8	.28	T		0753	.60	.36		0752	.336	.02	
6-9	.22	.00		0755	2.40	.44		0753	.291	.02	
6-10	.64	.08		0758	1.00	.49		0755	.249	.03	
6-11	.44	.05		0803	.00	.49		0758	.262	.04	
6-12	.76	.18		0805	1.50	.54		0800	.210	.05	
6-14	.08	.00		0807	.60	.56		0803	.0989	.06	
6-15	.08	.00		0809	.00	.56		0805	.0690	.06	
6-18	1.48	.38		0813	2.70	.74		0808	.0833	.07	
6-23	.84	.05		0815	.90	.77		0810	.0760	.07	
6-24	.05	.00		0856	.00	.77		0813	.198	.07	
6-25	.20	T		0858	1.80	.83		0815	.385	.08	
6-26	.16	T		0900	3.90	.96		0816	.420	.09	
				0902	3.00	1.06		0818	.368	.10	
				0905	1.00	1.11		0821	.187	.12	
				0908	.80	1.15		0827	.0250	.13	
				0911	3.40	1.32		0845	.0003	.13	
				0915	.15	1.33		0858	.0003	.13	
				0918	.60	1.36		0901	.291	.13	
				0920	.30	1.37		0903	.737	.15	
				0940	.18	1.43		0904	.839	.16	
				0950	.06	1.44		0905	.839	.18	
Watershed conditions: In wheat											
of a corn, wheat, meadow,											
meadow rotation (prevailing											
practice). Wheat 35 in. high;											
clover and weeds 3 in. high;											
density of cover 60%.											
				0955	.12	1.45		0906	.761	.19	
				0957	.30	1.46		0909	.620	.22	
				1000	.60	1.49		0912	.866	.26	
				1010	.18	1.52		0913	.950	.27	
								0914	.950	.29	
Continued on next page											

Watershed conditions: In wheat of a corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 35 in. high; clover and weeds 3 in. high; density of cover 60%.

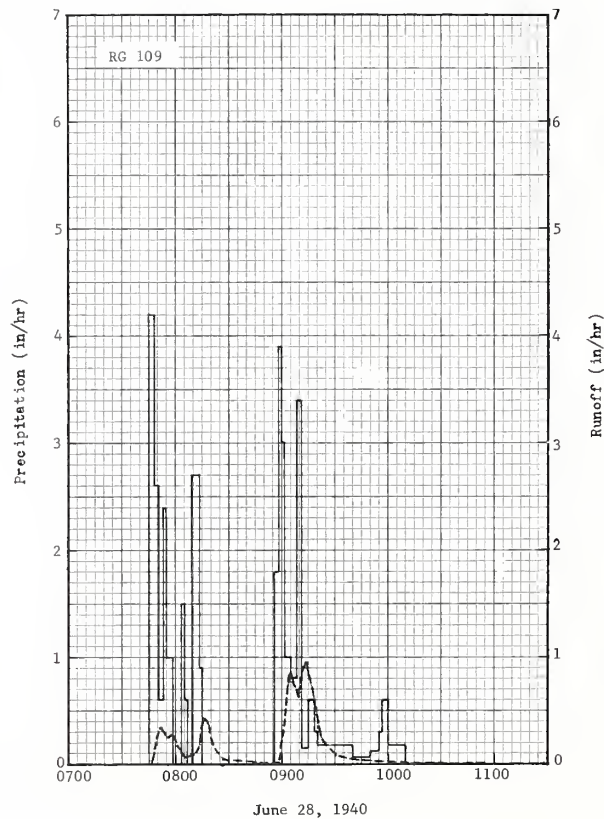
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NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.1898. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.18-5.

Cooperative Research Project of USDA and Ohio Agricultural Experiment Station

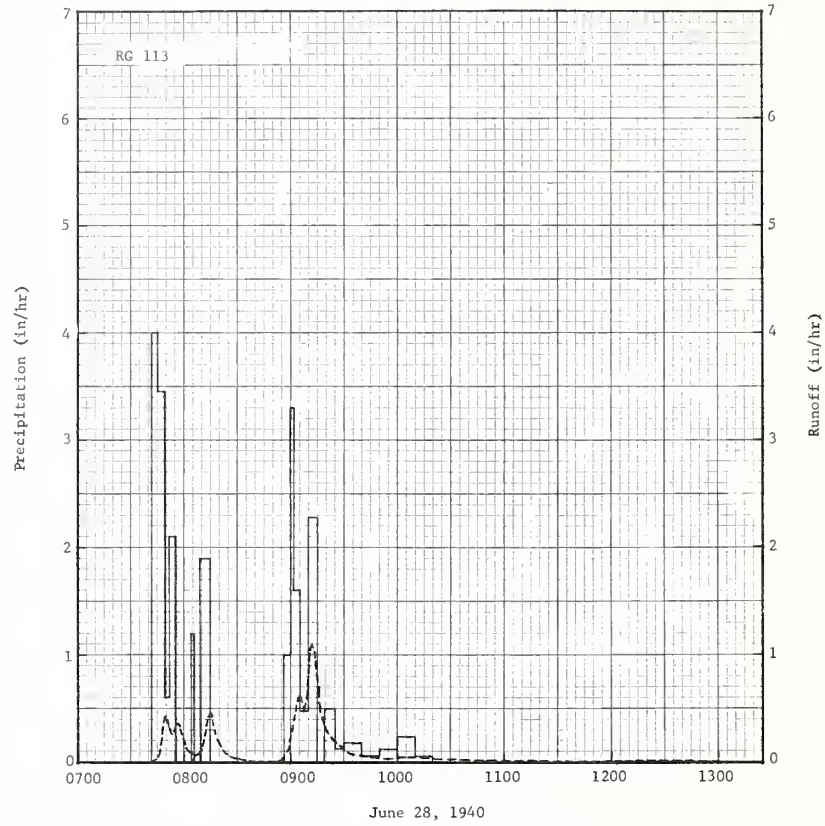
1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 111				26.18	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
			Event of June 28, 1940—Continued									
							6-28	0915	.839	.30		
								0923	.262	.37		
								0930	.0760	.39		
								0945	.0250	.40		
								0956	.0102	.41		
								1008	.0501	.41		
								1018	.0208	.42		
								1055	.0000	.42		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.1898.



COSHOCOTON, OHIO WATERSHED 111

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCOTON, OHIO WATERSHED 121 26.19									
							AREA—1.42 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	PL	2.75	3.17	2.78	1.03	2.28	1.62	2.48	1.52	5.45	2.06	2.92	2.10	30.16		
	Q	.18	.61E	.33	.01	.00	.00	.00	.00	.00	.00	.00	.00	1.13		
STA AV2/ (39-62)	P	2.72	2.29	3.02	3.20	3.77	4.53	4.48	2.88	2.70	2.23	2.33	2.09	36.24		
	Q	.22	.21	.22	.16	.05	.28	.22	.15	.09	.03	.01	.03	1.67		
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.21E	2-23	.22E	2-23	.30E	2-23	.34E	2-23	.34E	2-23	.34E	2-23	.39E	2-19	.48E
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	8-23 1944	7.82	9-1 1950	1.32	9-1 1950	1.39	9-1 1950	1.39	9-1 1950	1.39	9-1 1950	1.39	9-1 1950	1.39	7-4 1939	1.44E
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, poor. Watershed conditions: First-year meadow, improved practice. 1/ Rain gage 113. 2/ Precipitation and runoff records began Mar. 20, 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 24 in. to 60 in. of soil. The Lower Freeport sandstone caps the upper 25% of the watershed. Silty to clayey shales underlie the lower 65% with the Middle Kittanning coal and clay outcropping in the lower 10% of the watershed. The watershed lies very close to the axis of the Cambridge Arch which trends northeast-southwest at this point. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT							COSHOCOTON, OHIO WATERSHED 121 26.19									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RG 113			RG	113											
5-29	.46	.00	6-28	0742	.00	.00	6-28	0743	.0000	.00						
5-30	.84	.80E		0745	4.00	.20		0746	.0416							
6-7	.12	.00		0749	3.45	.43		0749	.0395	.01						
6-8	.26	T		0752	.60	.46		0750	.427	.02						
6-9	.20	T		0756	2.10	.60		0751	.335	.03						
6-10	.95	.06		0804	.00	.60	0753	.266	.04							
6-11	.33	.02		0806	1.20	.64	0756	.349	.05							
6-12	.59	.05		0809	.00	.64	0757	.335	.06							
6-14	.08	.00		0815	1.90	.83	0801	.112	.07							
6-15	.03	.00		0857	.00	.83	0807	.0518	.08							
6-18	1.44	.29		0900	1.00	.88	0810	.104	.08							
6-23	.84	.04		0902	3.30	.99	0814	.427	.10							
6-24	.02	.00		0905	1.60	1.07	0815	.462	.11							
6-25	.14	.00		0910	.48	1.11	0816	.427	.11							
6-26	.17	.00		0915	2.28	1.30	0820	.165	.13							
				0919	.00	1.30	0827	.0416	.14							
				0925	.50	1.35	0855	.0085	.15							
				0930	.12	1.36	0859	.120	.15							
				0940	.18	1.39	0901	.335	.16							
				0950	.06	1.40	0903	.573	.18							
				1000	.12	1.42	0904	.613	.19							
				1010	.24	1.46	0905	.592	.20							
				1020	.06	1.47	0907	.479	.21							
									0909	.675	.23					
Watershed conditions: In wheat of corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 30 in. high; clover and weeds 4 in. high; density of cover 60%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO GFS, MULTIPLY BY 1.4318. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISG. PUB. 945, P. 26.20-5.																



COSHOCTON, OHIO WATERSHED 121

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO		WATERSHED 106		26.20				
						AREA—1.56 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/	2.75	3.17	2.78	1.03	2.28	1.62	2.48	1.52	5.45	2.06	2.92	2.10	30.16
	Q	.52	2.60	.17	.00	.00	.00	.00	.00	.00	.01	.04	.00	3.34
STA AV2/	P	2.72	2.29	3.02	3.20	3.77	4.53	4.48	2.88	2.70	2.23	2.33	2.09	36.24
(39-62)	Q	.27	.28	.19	.14	.11	.37	.35	.23	.20	.02	.03	.09	2.28
MEAN P 3/		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80
54 YR														

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	2-23	.45	2-23	.38	2-23	.58	2-23	.79	2-23	1.41	2-23	1.41	2-23	2.00	2-19	2.44

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	8-23	7.63	9-1	1.26	9-1	1.38	9-1	1.39	2-23	1.41	2-23	1.41	2-23	2.00	2-19	2.44
1962	1944		1950		1950		1950		1962		1962		1962		1962	

Notes: Quality of records: Monthly P and Q, excellent, annual maximum discharges and volumes, excellent. Watershed conditions: First-year meadow, prevailing practice. 1/ Rain gage 113. 2/ Precipitation and runoff records began Apr. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.

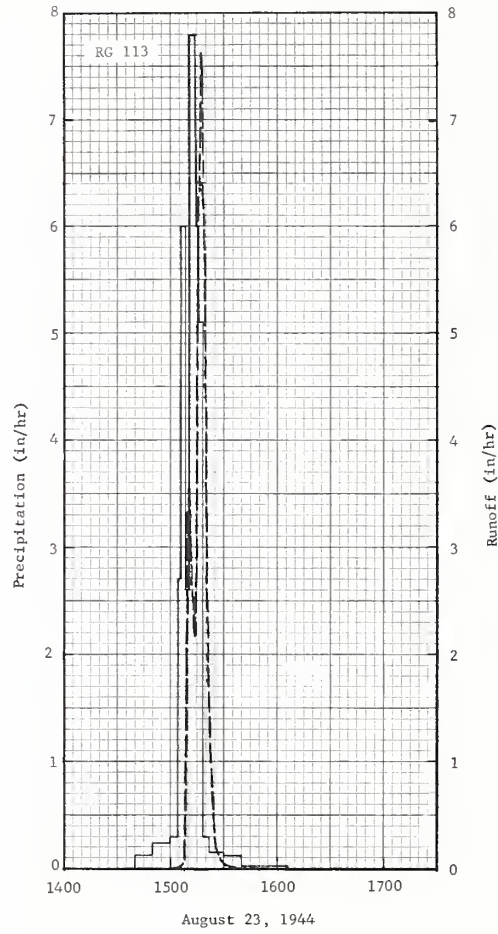
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 24 in. to 60 in. of soil. The Lower Freeport sandstone outcrops beneath the upper 25% of the watershed. Silty to clayey shales underlie the lower 75% of the watershed. The Middle Kittanning coal outcrops approximately 10 ft beneath the watershed outlet. The rock strata are inclined at less than 1° to the southeast. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.

1944 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO		WATERSHED 106		26.20			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
	RG 113			Event of August 23, 1944 4/						
				RG	113					
7-26	.11	.00	8-23	1440	.00	.00	8-23	1500	.0000	.00
7-28	.36	T		1450	.12	.02		1505	.0003	T
7-29	.18	.01		1500	.24	.06		1506	.0011	T
8-5	1.10	.35		1504	.30	.08		1507	.0336	T
8-14	.08	.00		1506	2.70	.17		1508	1.54	.01
8-16	.91	.21		1508	6.00	.37		1509	3.24	.05
8-17	.30	.05		1511	2.60	.50		1510	3.56	.11
8-21	.18	.00		1514	7.80	.89		1511	3.24	.17
8-22	.14	.00		1516	6.00	1.09		1512	2.65	.21
				1518	5.10	1.26		1513	2.17	.25
				1522	.30	1.28		1514	2.74	.30
				1530	.15	1.30		1515	4.38	.35
				1540	.12	1.32		1516	6.55	.45
				1606	.02	1.33		1517	7.63	.56
								1518	6.06	.68
								1519	4.50	.76
								1520	3.24	.83
								1521	1.90	.87
								1522	1.23	.90
								1523	.763	.91
								1524	.452	.92
								1525	.231	.93
								1527	.133	.94
								1528	.0877	.94
								1529	.0522	.94
								1530	.0258	.94
								1535	.0077	.94
								1540	.0039	.94
								1555	.0000	.94

Watershed conditions: In corn of a corn, wheat, meadow, meadow rotation (prevailing practice). Corn 84 in. high. Weeds 24 in. high.

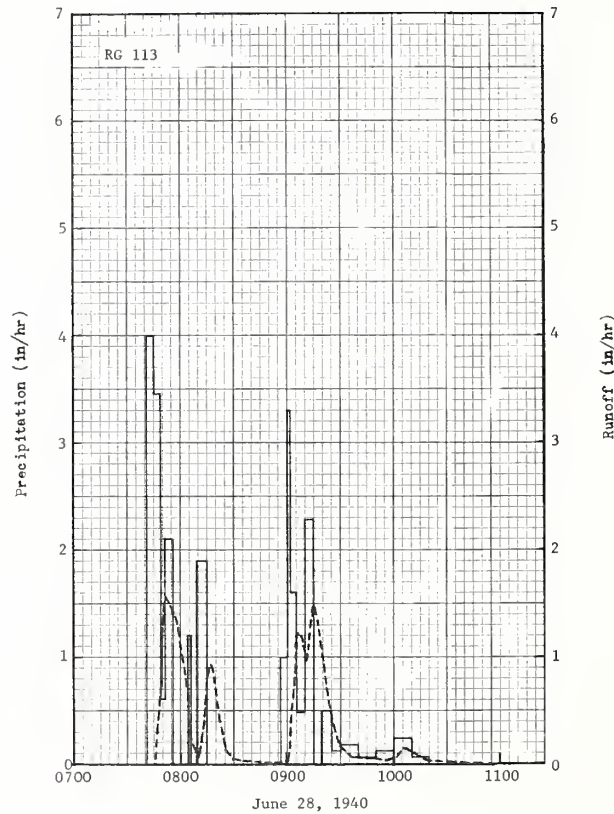
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.5730. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.20-5. 4/ SUBSTITUTED FOR JUNE 28, 1940, EVENT, WHOSE RUNOFF PEAK WAS SLIGHT, 0.0630 IN/HR.



COSHOCTON, OHIO WATERSHED 106

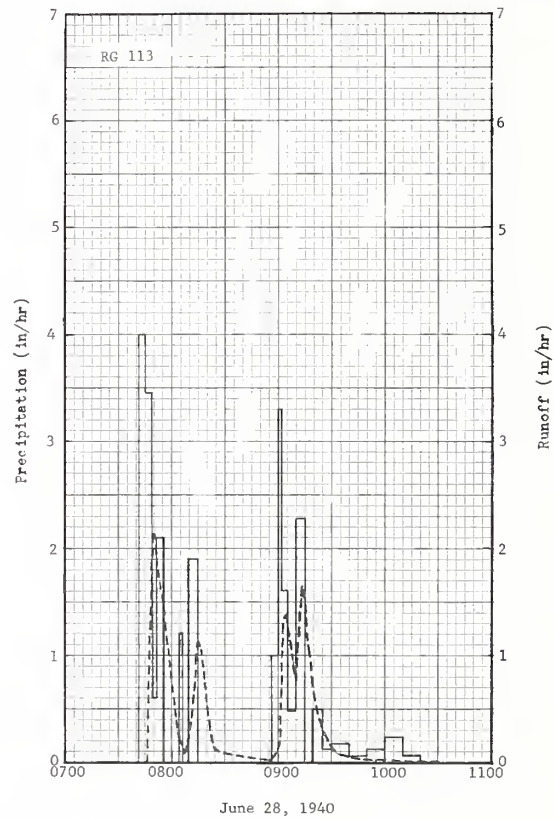
MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO				WATERSHED 188				26.21	
							AREA—2.05 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P 1/	2.88	3.35	3.02	1.05	2.61	1.51	2.57	1.49	5.30	2.07	2.82	2.12	30.79		
	Q	.09	.48	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.59		
STA AV2/ (39-62)	P	2.61	2.31	2.97	3.17	3.94	4.41	4.23	2.99	2.70	2.22	2.32	2.08	35.95		
	Q	.21	.20	.17	.12	.11	.34	.11	.20	.17	.07	.02	.03	1.75		
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		5 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.29	2-23	.22	2-23	.30	2-23	.34	2-23	.34	2-23	.34	2-23	.39	2-19	.48
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	8-23 1944	3.06	9-1 1950	1.84	9-1 1950	2.07	9-1 1950	2.08	9-1 1940	2.08	9-1 1940	2.08	9-1 1950	2.08	8-25 1940	2.17
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: First-year meadow, improved practice plus mulch tillage. 1/ Rain gage 115. 2/ Precipitation and runoff records began Sept. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 24 in. to 60 in. of soil. The Lower Freeport sandstone occurs beneath the upper 80% of the watershed and is underlain by arenaceous shale and clayey shale. The Middle Kittanning coal occurs 25 ft beneath the watershed outlet. The rock strata have no measurable dip. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT							COSHOCTON, OHIO				WATERSHED 188				26.21	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RG 115			RG	113 4/											
5-29	.38	.13	6-28	0742	.00	.00	6-28	0746	.0000	.00						
5-30	.79	.21		0745	4.00	.20		0749	.749	.01						
6-7	.15	.00		0749	3.45	.43		0751	1.44	.05						
6-8	.31	.22		0752	.60	.46		0752	1.56	.07						
6-9	.17	T		0756	2.10	.60		0754	1.49	.13						
6-10	.77	.47		0804	.00	.60		0758	1.33	.22						
6-11	.47	.25		0806	1.20	.64		0800	1.10	.26						
6-12	.63	.45		0809	.00	.64		0803	.730	.31						
6-14	.08	.00		0815	1.90	.83		0806	.245	.33						
6-15	.02	.00		0857	.00	.83		0808	.102	.34						
6-18	1.46	.97		0900	1.00	.88		0810	.0674	.34						
6-23	.82	.46		0902	3.30	.99		0813	.387	.35						
6-24	T	.00		0905	1.60	1.07		0816	.870	.38						
6-25	.18	.01		0910	.48	1.11		0817	.912	.39						
6-26	.15	.03		0915	2.28	1.30		0819	.851	.42						
				0919	.00	1.30		0822	.474	.46						
				0925	.50	1.35		0825	.154	.47						
				0930	.12	1.36		0829	.0319	.48						
				0940	.18	1.39		0854	.0021	.48						
				0950	.06	1.40		0901	.0284	.48						
				1000	.12	1.42		0903	.749	.49						
				1010	.24	1.46		0905	1.20	.53						
				1020	.06	1.47		0906	1.22	.55						
								0908	1.15	.59						
								0911	.958	.64						
								0914	1.39	.69						
								0915	1.49	.72						
								0916	1.41	.74						
								0919	1.10	.80						
								0922	.749	.85						
								0926	.387	.89						
								0929	.170	.90						
								0936	.0572	.91						
								0941	.0674	.92						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.0671. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, MISC. PUB. 945, P. 26.21-4. 4/ SUBSTITUTED FOR RAIN GAGE 115, WHOSE RECORD WAS ERRONEOUS.																

1940			SELECTED RUNOFF EVENT			COSHOCOTON, OHIO			WATERSHED 188			26.21
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
				Event of June 28, 1940 — Continued								
							6-28	0957	.0219	.93		
								1002	.0623	.93		
								1005	.146	.94		
								1009	.123	.94		
								1019	.0357	.96		
								1049	.0000	.96		
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.0671.												



COSHOCOTON, OHIO WATERSHED 188

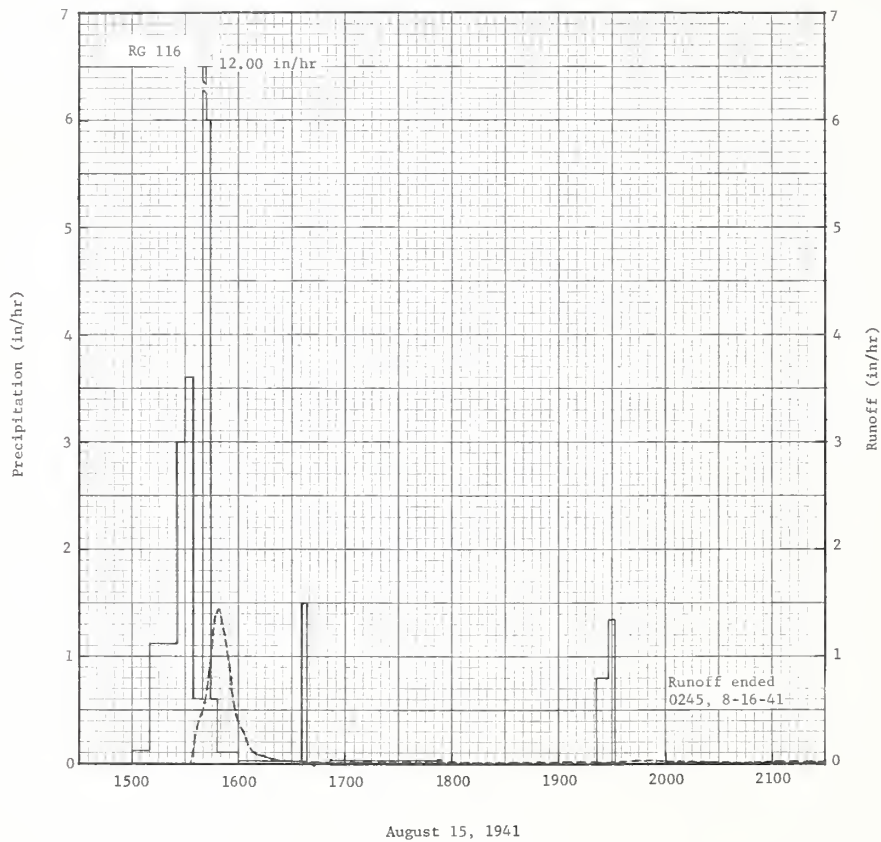
MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO				WATERSHED 185				26.23		
						AREA—7.40 ACRES										
MONTH		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
YEAR																
1962	P1/	2.88	3.39	2.98	1.00	2.61	1.59	2.64	1.39	5.40	1.95	2.90	2.09	30.82		
	Q	.11	.45	.12	.01	.00	.00	.01	.01	.02	.00	.02	.00	.75		
STA AV2/	P	2.75	2.30	3.05	3.22	3.85	4.27	4.18	2.94	2.68	2.19	2.34	2.13	35.90		
(39-62)	Q	.15	.22	.16	.16	.13	.35	.21	.14	.17	.06	.02	.05	1.82		
MEAN P 3/		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.19	2-23	.14	2-23	.20	2-23	.24	2-23	.24	2-23	.24	2-23	.29	2-23	.42
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-16 1946	3.35	9-1 1950	1.91	9-1 1950	2.31	9-1 1950	2.32	9-1 1950	2.32	9-1 1950	2.32	9-1 1950	2.32	9-1 1950	2.32
Notes: Quality of records: Monthly P, excellent; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: Meadow and corn strips, improved practice with strip cropping. 1/ Rain gage 128. 2/ Precipitation and runoff records began Sept. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The Lower Freeport sandstone underlies the upper 50% of the watershed. Arenaceous to clayey shale occur in the middle 25% and overlies the Middle Kittanning aquifer and clay. Seep areas are associated with the outcrop of this horizon in the watershed. The lower 25% is underlain by claystone and clayey siltstone. The rock strata are inclined to the east by less than 1°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCOTON, OHIO		WATERSHED 185				26.23				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-OAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RG 115 4/			RG	113 5/											
5-29	.38	.11	6-28	0742	.00	.00	6-28	0746	.0000	.00						
5-30	.79	.10E		0745	4.00	.20		0748	1.82	.02						
6-7	.15	.00		0749	3.45	.43		0749	2.06	.05						
6-8	.31	.11		0752	.60	.46		0750	2.13	.09						
6-9	.17	T		0756	2.10	.60		0751	1.94	.12						
6-10	.77	.40		0804	.00	.60		0756	1.38	.25						
6-11	.47	.21		0806	1.20	.64		0800	.749	.32						
6-12	.63	.41		0809	.00	.64		0803	.260	.34						
6-14	.08	.00		0815	1.90	.83		0807	.0867	.35						
6-15	.02	.00		0857	.00	.83		0812	.442	.36						
6-18	1.46	.81		0900	1.00	.88		0814	1.08	.39						
6-23	.82	.25		0902	3.30	.99		0815	1.14	.41						
6-24	T	.00		0905	1.60	1.07		0816	1.09	.43						
6-25	.18	T		0910	.48	1.11		0820	.515	.48						
6-26	.15	.01		0915	2.28	1.30		0824	.105	.50						
				0919	.00	1.30		0831	.0823	.51						
				0925	.50	1.35		0855	.0045	.51						
				0930	.12	1.36		0901	.200	.51						
				0940	.18	1.39		0903	1.35	.54						
				0950	.06	1.40		0904	1.39	.56						
				1000	.12	1.42		0905	1.34	.58						
				1010	.24	1.46		0908	.923	.64						
				1020	.06	1.47		0910	.749	.67						
								0912	1.41	.70						
								0913	1.65	.73						
								0914	1.54	.75						
								0918	.749	.83						
								0924	.328	.88						
								0933	.0867	.91						
								0955	.0129	.92						
								1030	.0000	.93						
Watershed conditions: In wheat of a corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 36 in. high; clover and weeds 4 in. high; density of cover 65%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.4616. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.23-5. 4/ RAIN GAGE 128 NOT IN OPERATION. 5/ RAIN GAGE 115 RECORD ERRONEOUS.																



COSHOCTON, OHIO WATERSHED 185

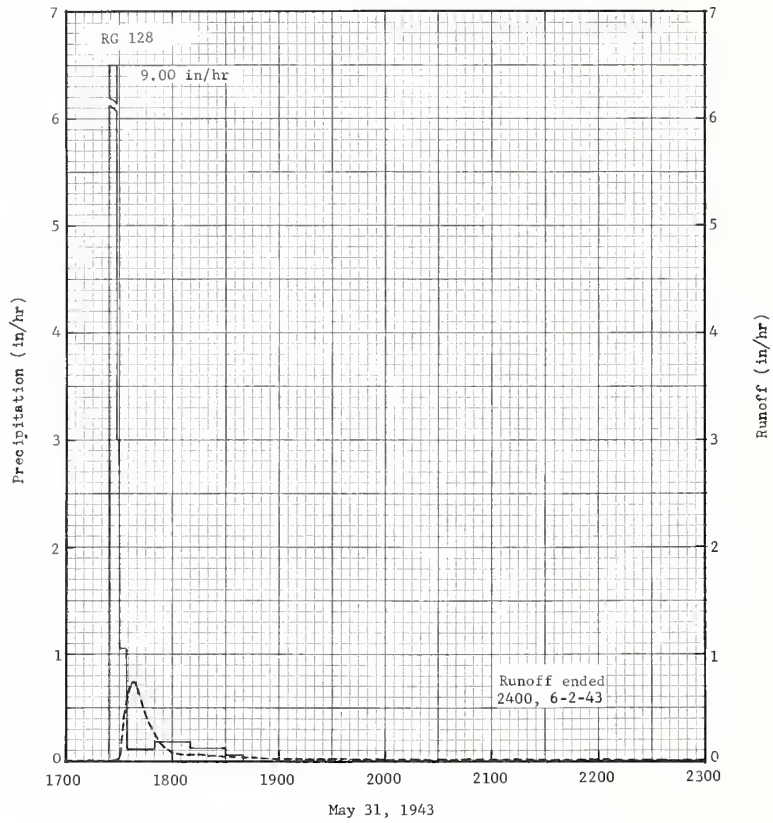
SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 187			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 15-16, 1941 - Continued							8-15	1637	.0118	.38
								1709	.0037	.39
								1747	.0015	.39
								1926	.0001	.39
								1934	.0009	.39
								1943	.0132	.39
								1947	.0179	.39
								1950	.0196	.39
								1953	.0179	.39
								2026	.0046	.40
								2101	.0015	.40
								2400	.0001	.40
							8-16	0245	.0000	.40

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.2601.



COSHOCOTON, OHIO WATERSHED 187

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO				WATERSHED 192				26.25		
						AREA—7.59 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1940	P	1.27	2.28	3.30	4.20	4.37	7.26	3.58	6.88	2.09	1.08	3.95	3.27	43.53		
	Q1/	.55	1.48	1.25	1.34	.54	2.38	.44	1.00	.09	.00	.39	.42	9.88		
	P2/	2.88	3.39	2.98	1.00	2.61	1.59	2.64	1.39	5.40	1.95	2.90	2.09	30.82		
1962	Q	.18	1.13	.33	T	.00	.00	T	T	T	.00	.07	.00	1.71		
	STA AVG 3/ P	2.75	2.30	3.05	3.22	3.85	4.27	4.18	2.94	2.68	2.19	2.34	2.13	35.90		
	(39-62) Q	.51	.58	.39	.26	.17	.38	.19	.08	.14	.02	.05	.19	2.96		
MEAN P 4/		3.30	2.62	3.45	3.72	3.84	4.20	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.19	2-23	.15	2-23	.24	2-23	.35	2-23	.66	2-23	.68	2-23	.81	2-21	1.04
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO	6-16	4.60	6-16	1.85	9-1	2.02	9-1	2.04	6-16	2.04	1-20	2.17	1-20	2.30	1-20	2.36
1962	1946		1946		1950		1950		1946	5/	1959		1959		1959	
Notes: Quality of records: Monthly P, excellent; monthly Q, good; annual maximum discharges and volumes, excellent. Watershed conditions: Meadow to corn to wheat, prevailing practice. 1/ Revisions to runoff for April 1940 and annual total underlined. April increased from .95 in.; annual from 9.49 in. 2/ Rain gage 128. 3/ Precipitation and runoff records began Sept. 1939. Part-year amounts for 1939 are included in averages. 4/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 5/ Equal volume occurred Sept. 1, 1950.																
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 60 in. of soil. The Lower Freeport sandstone underlies the upper 25% of the watershed. It is underlain by silty shale in the Middle Kittanning coal and clay where seeps occur at the outcrop line. The Lower Kittanning coal and clay is overlain by silty shale and underlain by shale over sandstone. The sandstone occurs in the lower 10% of the watershed. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1943 SELECTED RUNOFF EVENT						COSHOCTON, OHIO				WATERSHED 192				26.25		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	RG 128			Event of May 31—June 2, 1943 6/												
5-2	.34	.00	5-31	RG 128			5-31	1727	.0009	.00						
5-7	.51	.00		1724	.00	.00		1729	.0065	.00						
5-8	.35	.00		1730	3.00	.70		1731	.0361	.01						
5-9	.18	.00		1734	1.05	.77		1733	.465	.01						
5-10	.08	.00		1750	.11	.80		1735	.640	.03						
5-11	.37	.00		1810	.18	.86		1737	.707	.05						
5-12	.21	T		1830	.12	.90		1738	.730	.06						
5-13	.02	.00		1840	.06	.91		1739	.730	.07						
5-15	.11	.00						1740	.696	.08						
5-16	.13	.00						1742	.619	.11						
5-17	.60	.01						1744	.483	.12						
5-18	.01	.00						1746	.399	.14						
5-19	.29	.00						1750	.253	.16						
5-21	.08	.00						1754	.154	.17						
5-24	.09	.00						1759	.0811	.18						
5-25	.84	.02						1810	.0649	.20						
5-26	.09	.00						1833	.0406	.22						
5-27	.02	.00						1900	.0238	.23						
5-30	1.88	.33						1940	.0112	.24						
5-31	7/.17	8/.05						2400	.0044	.27						
Watershed conditions: In wheat of corn, wheat, meadow, meadow rotation (prevailing practice). Wheat 20 in. high; clover, grass, and weeds 6 in. high; density of cover 60%.								6-1	1200	.0014	.30					
									2400	.0009	.32					
								6-2	2400	.0000	.33					
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.6535. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.23-5. 6/ SUBSTITUTED FOR EVENT OF JUNE 28, 1940, FOR WHICH THERE IS NO RECORD. 7/ RAIN ENDING 1230. 8/ RUNOFF PRIOR TO 1727.																

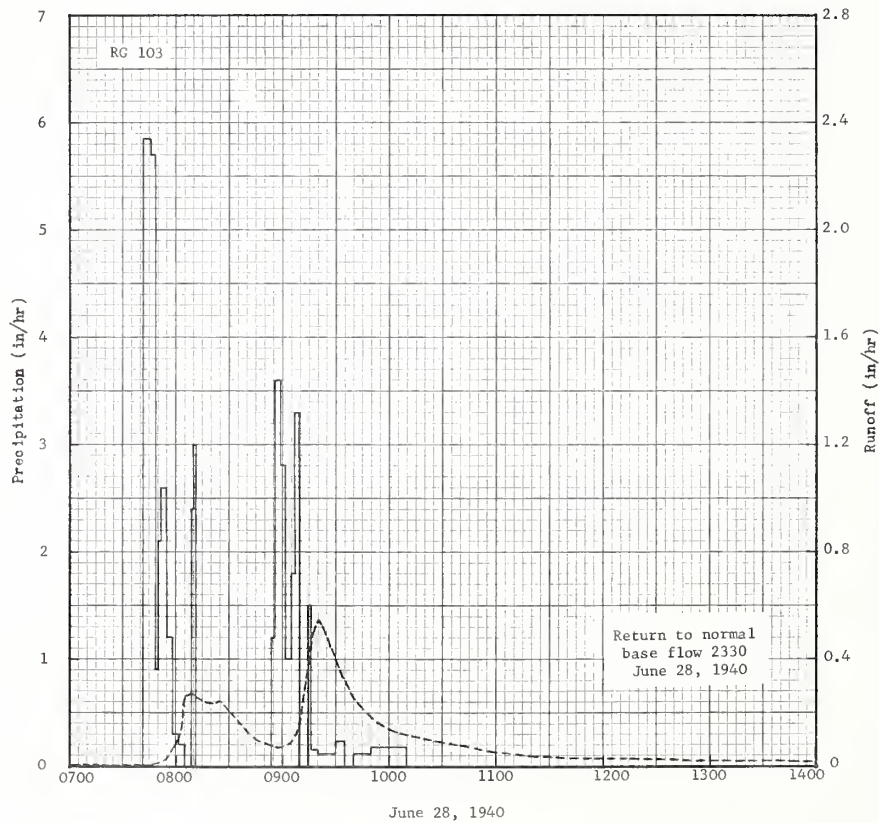


COSHOCTON, OHIO WATERSHED 192

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 172						26.26				
						AREA—43.6 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 1/ Q	2.88 1.07E	3.37 2.48E	3.08 2.51	1.18 1.34	2.66 .14	1.79 .03	2.54 .01	1.97 T	5.31 .05	2.28 .01	3.01 .05	2.11 .04	32.18 7.73			
STA AV 2/P (39-62) Q	2.76 1.35	2.45 1.60	3.16 2.42	3.27 2.35	3.82 1.49	4.43 .89	4.39 .33	2.85 .11	2.60 .14	2.29 .13	2.38 .26	2.16 .61	36.56 11.68			
MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.10E		4/		4/		4/		4/		4/		4/	2-21	1.70E
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-12 1957	2.64E	6-12 1957	1.07E	6-12 1957	1.23E	6-12 1957	1.38E	1-26 1952	1.48	1-26 1952	1.95	1-26 1952	2.34	4-3 1957	3.22
NOTES: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, poor. Watershed conditions: 33% of area in uneven age hardwoods; 67% in pines, planted in 1938. 1/ Precipitation obtained from rain gage 103. 2/ Precipitation and runoff records began Feb. 1939. Part-year amounts for 1939 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No record because of ice in flume during high runoff.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks in the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. The Lower Mahoning sandstone occurs at the highest point in the watershed and is underlain by shale and Lower Freeport sandstone. The underlying aquifers are the Middle Kittanning coal, the Lower Kittanning coal, the Van Port Limestone, Putnam Hill Limestone and the Tionesta coal. The lower 70% of the watershed is predominantly silty to arenaceous shale. The upper portion of the watershed is predominantly arenaceous shale and sandstone. Seep horizons and areas of springs occur along outcrops of the aquifers. Flume 172 is bottomed in the clayey shale just below the Tionesta coal and clay. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCOTON, OHIO WATERSHED 172						26.26				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	RC 103			Event of June 28, 1940												
				RC	103											
5-29	.45	.047	6-28	0742	.00	.00	6-28	0745	.0011	.000						
5-30	.78	.227		0746	5.85	.39		0752	.0127	.001						
5-31	.00	.176		0748	5.70	.58		0756	.0355	.002						
6-1	.00	.108		0750	.90	.61		0800	.0858	.006						
6-2	.00	.073		0752	2.10	.68		0803	.163	.012						
6-3	.00	.052		0755	2.60	.81		0806	.266	.023						
6-4	.00	.039		0758	1.20	.87		0808	.278	.032						
6-5	.00	.027		0802	.30	.89		0812	.255	.050						
6-6	.00	.021		0805	.20	.90		0820	.237	.083						
6-7	.12	.020		0808	.00	.90		0825	.241	.102						
6-8	.26	.016		0810	2.40	.98		0832	.194	.128						
6-9	.32	.021		0812	3.00	1.08		0838	.146	.145						
6-10	1.01	.126		0854	.00	1.08		0844	.103	.157						
6-11	.47	.124		0856	1.20	1.12		0858	.0696	.177						
6-12	.62	.152		0859	3.60	1.30		0905	.0926	.186						
6-13	.00	.120		0902	2.80	1.44		0909	.146	.193						
6-14	.06	.072		0905	1.00	1.49		0912	.226	.202						
6-15	T	.051		0907	1.80	1.55		0915	.394	.219						
6-16	.00	.036		0909	3.30	1.66		0918	.523	.242						
6-17	.00	.030		0914	.00	1.66		0920	.544	.260						
6-18	1.45	.337		0916	1.50	1.71		0922	.530	.276						
6-19	.00	.112		0920	.15	1.72		0927	.448	.319						
6-20	.00	.061		0930	.12	1.74		0934	.330	.364						
6-21	.00	.042		0935	.24	1.76		0940	.255	.392						
6-22	.00	.036		0940	.00	1.76		0950	.184	.429						
6-23	.88	.086		0950	.12	1.78		1004	.126	.465						
6-24	.03	.065		1010	.18	1.84		1030	.0858	.510						
6-25	.24	.039						1100	.0516	.544						
6-26	.14	.042						1120	.0396	.559						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 43.963. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.26-5.																

1940 SELECTED RUNOFF EVENT						COSHOCOTON, OHIO		WATERSHED 172		26.26	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 28, 1940—Continued											
6-27	.00	.029					6-28	1150	.0305	.576	
6-28	.00	1/.008						1220	.0243	.589	
Watershed conditions: One-third of area in hardwoods; two-thirds reforested to pines. Hardwoods up to 60 ft. high, shrubs 18 in. high, herbs 12 in. high. Pines on reforested area 18 in. high.								1255	.0209	.603	
								1350	.0177	.620	
								1600	.0139	.654	
								1640	.0139	.663	
								2000	.0118	.705	
								2330	2/.0102	.744	

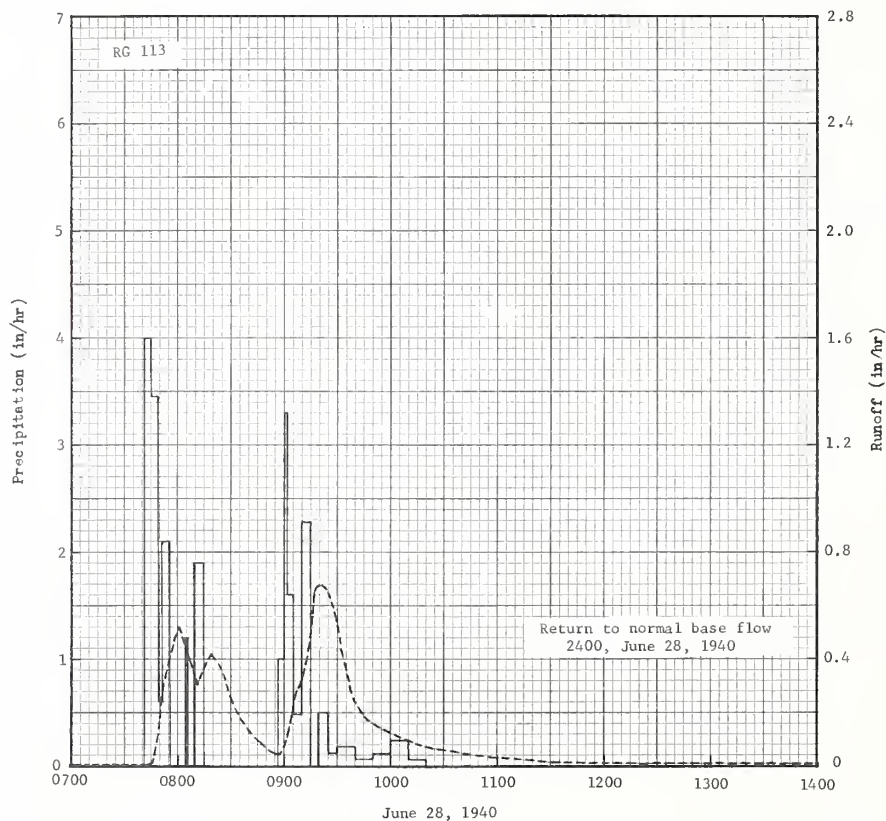
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 43.963. 1/ RUNOFF PRIOR TO 0745. 2/ NORMAL BASE FLOW.



COSHOCOTON, OHIO WATERSHED 172

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO		AREA—29.0 ACRES		WATERSHED 169		26.27			
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P1/	2.75	3.17	2.78	1.03	2.28	1.62	2.48	1.52	5.45	2.06	2.92	2.10	30.16			
Q	.42E	1.50E	1.29	.42	.01	T	.01	.00	.03	.01	.13	.03	3.85			
STA AV2/ P	2.72	2.29	3.02	3.18	3.87	4.43	4.38	2.95	2.78	2.13	2.41	2.13	36.29			
(40-62) Q	.97	1.03	1.32	1.00	.52	.58	.29	.19	.18	.04	.11	.39	6.62			
MEAN P 3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.26E		4/		4/		4/		4/		4/		4/	2-21	1.06E
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO	6-12	2.59	9-1	1.70	9-1	2.00	9-1	2.03	9-1	2.04	1-21	2.12E	1-21	2.37E	1-20	2.68E
1962	1957		1950		1950		1950		1950		1959		1959		1959	
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, poor. Watershed conditions: 6% hardwoods, 6% reforested, 48% grassland, 34% cultivated, 6% miscellaneous, contour strip cropped. 1/ Rain gage 113. 2/ Precipitation and runoff records began Jan. 1940. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No record due to ice in flume during high runoff period.																
GENERALLY REPRESENTS: (Revision) Allegheny-Gumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series, occur beneath 30 in. to 80 in. of soil. The Lower Freeport sandstone caps the north watershed divide. The Middle Kittanning coal and clay and Lower Kittanning coal and clay occur in the upper 30% of the watershed. The lower 70% of the watershed is predominantly silty and arenaceous shale with a thick sandstone lens in the northern portion of the watershed. The watershed lies along the crest of the Cambridge Arch. The strata dip toward the gage or southwest at less than 1/2°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT							COSHOCTON, OHIO		WATERSHED 169		26.27					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RG 113			RG	113											
5-29	.46	.012	6-28	0742	.00	.00	6-28	0742	.0005	.00						
5-30	.84	.094		0745	4.00	.20		0743	.0007	T						
5-31	.00	.043		0749	3.45	.43		0745	.0075	T						
6-1	.00	.027		0752	.60	.46		0746	.0103	T						
6-2	.00	.020		0756	2.10	.60		0747	.0489	.001						
6-3	.00	.017		0804	.00	.60		0748	.0951	.002						
6-4	.00	.015		0806	1.20	.64		0750	.245	.008						
6-5	.00	.010		0809	.00	.64		0755	.383	.036						
6-6	.00	.007		0815	1.90	.83		0801	.520	.082						
6-7	.12	.005		0857	.00	.83		0807	.400	.130						
6-8	.26	.011		0900	1.00	.88		0812	.298	.158						
6-9	.20	.008		0902	3.30	.99		0816	.383	.181						
6-10	.95	.105		0905	1.60	1.07		0818	.417	.194						
6-11	.33	.089		0910	.48	1.11		0819	.417	.201						
6-12	.59	.158		0915	2.28	1.30		0824	.369	.234						
6-13	.00	.038		0919	.00	1.30		0832	.232	.274						
6-14	.08	.021		0925	.50	1.35		0840	.129	.297						
6-15	.03	.018 E		0930	.12	1.36		0857	.0448	.320						
6-16	.00	.011 E		0940	.18	1.39		0902	.109	.326						
6-17	.00	.008 E		0950	.06	1.40		0906	.264	.338						
6-18	1.44	.450 E		1000	.12	1.42		0910	.326	.358						
6-19	.00	.007		1010	.24	1.46		0917	.653	.413						
6-20	.00	.012 E		1020	.06	1.47		0918	.674	.424						
6-21	.00	.014						0919	.674	.435						
6-22	.00	.015						0923	.663	.480						
6-23	.84	.158						0929	.547	.541						
6-24	.02	.030						0937	.298	.596						
6-25	.14	.015						0947	.172	.634						
6-26	.17	.028						1023	.0653	.693						
6-27	.00	.011														
6-28	.00	5/.0033														
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 29.241. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISG. PUB. 945, P. 26.27-6. 5/ RUNOFF PRIOR TO 0742.																

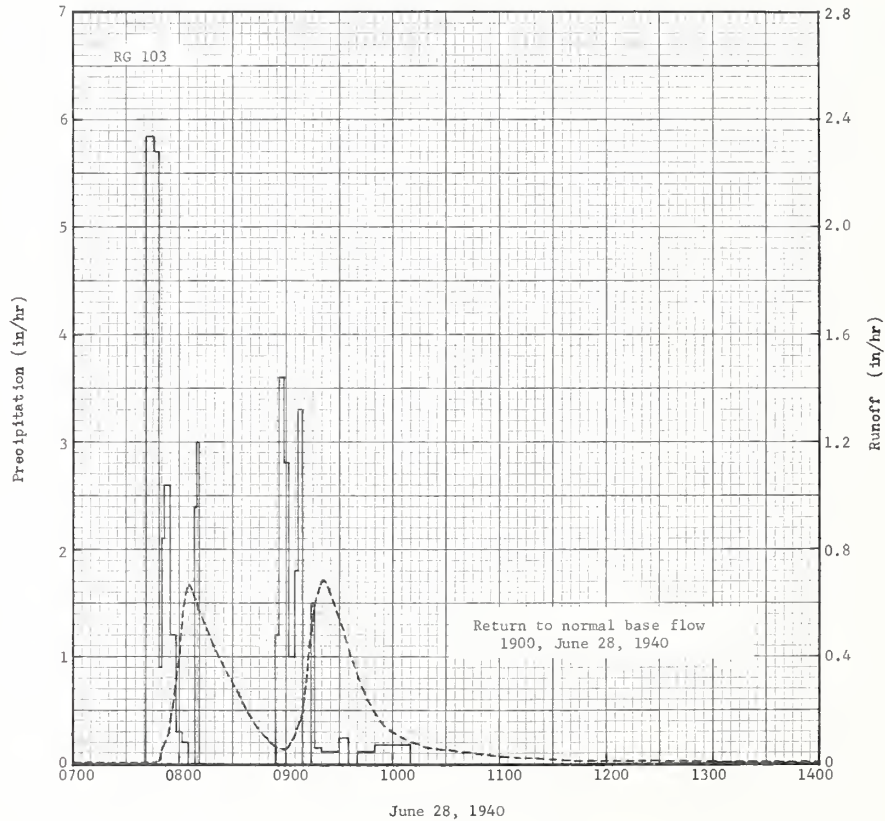
1940 SELECTED RUNOFF EVENT			COSHOCTON, OHIO				WATERSHED 169		26.27	
ANTECEDENT CONOITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of June 28, 1940—Continued							
<p>Watershed conditions: Mixed cover under prevailing practice. 35% of area in corn 30 in. high, 6% in wheat 36 in. high, 32% in meadow 13 in. high, 8% in pasture 9 in. high, 3% in protected woodland, 4% reforested, 4% idle, 8% farmstead.</p>							6-28	1044	.0378	.711
							1100	.0256	.719	
							1132	.0149	.729	
							1230	.0084	.740	
							1615	.0028	.759	
							2400	<u>1/</u> .0014	.774	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 29.241. <u>1/</u> NORMAL BASE FLOW.										



COSHOCKTON, OHIO WATERSHED 169

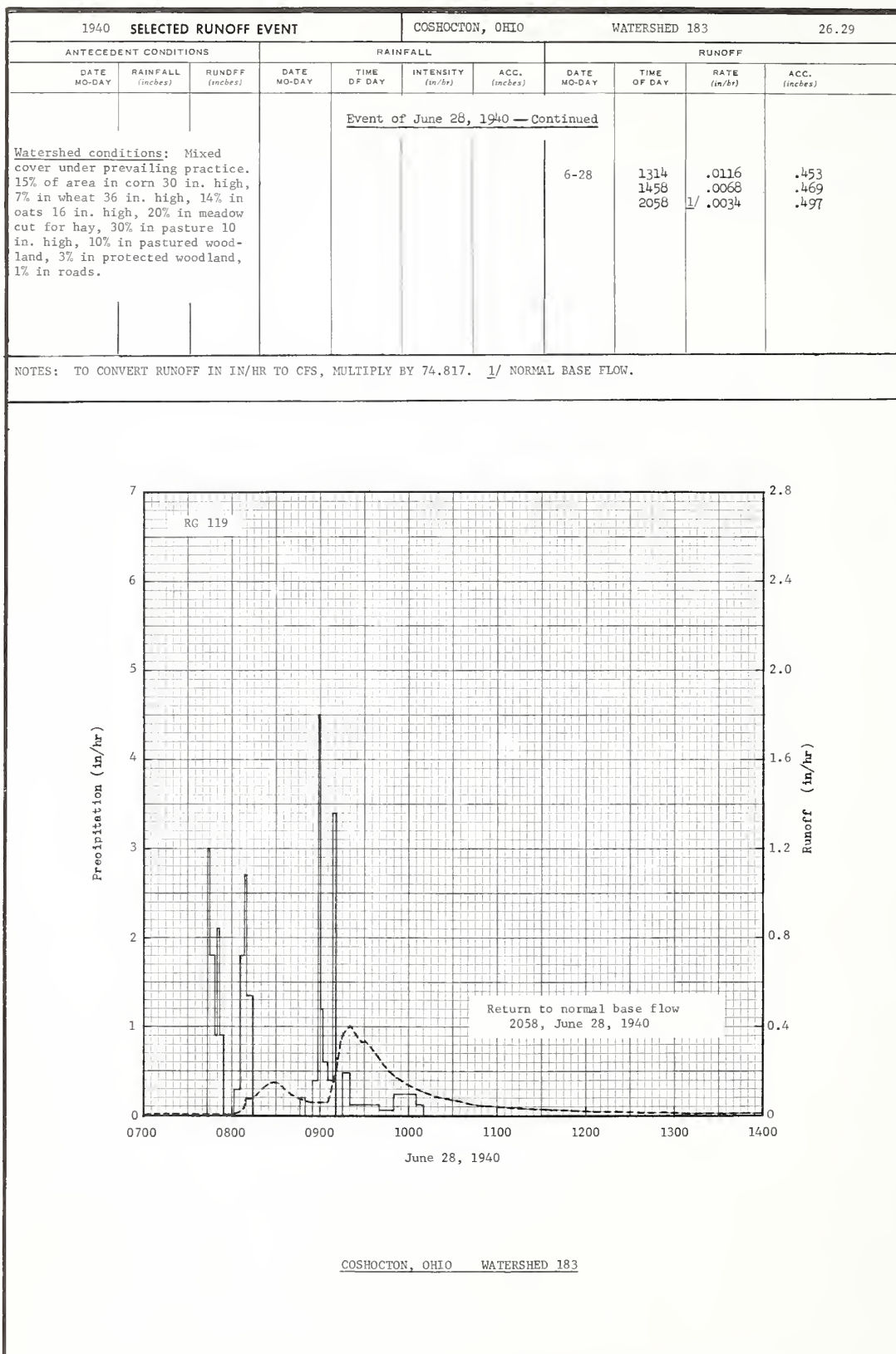
MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO				WATERSHED 177				26.28		
AREA—75.6 ACRES																
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/ Q	2.88 .96E	3.37 1.91E	3.08 1.77	1.18 .67	2.66 .05	1.79 .01	2.54 T	1.97 T	5.31 .02	2.28 .01	3.01 .23	2.11 .07	32.18 5.70		
STA AV2/ (40-62) Q	P Q	2.76 1.21	2.39 1.19	3.15 1.58	3.24 1.21	3.94 .62	4.35 .66	4.31 .30	2.91 .14	2.66 .15	2.16 .06	2.47 .17	2.19 .57	36.53 7.86		
MEAN P 3/ 54 YR	P Q	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.14E		4/		4/		4/		4/		4/		4/	2-21	1.41E
MAXIMUMS FOR PERIOD OF RECORD																
19 40 TO 19 62	6-12 1957	3.14	6-12 1957	1.33	9-1 1950	1.55	9-1 1950	1.63	9-1 1950	1.64	1-21 1959	1.94E	1-26 1952	2.00	1-20 1952	2.72
Notes: Quality of records: Monthly P, good; monthly Q, excellent; annual maximum discharges and volumes, poor. Watershed conditions: 4% hardwoods, 6% reforested, 67% grassland, 17% cultivated, 6% miscellaneous, contour strip cropped. 1/ Rain gage 103. 2/ Precipitation and runoff records began Jan. 1940. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No record due to ice in flume during high runoff period.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series and Allegheny series, occur beneath 24 in. to 80 in. of soil. The upper 5% of the watershed is underlain by the horizon of the Lower Mahoning sandstone or the Conemaugh series. The upper 15% of the watershed is underlain by the Lower Freeport sandstone. The Middle Kittanning coal and Lower Kittanning coal occur in the upper 50% and are two aquifers which produce seeps. These aquifers are underlain by silty to arenaceous shale sequence with thin sandstone lenses and one thin discontinuous limestone. The rock strata are inclined irregularly through the northwest at approximately 1°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO				WATERSHED 177				26.28		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RG 103			RG	103											
5-29	.45	.011	6-28	0742	.00	.00	6-28	0745	.0005	.000						
5-30	.78	.097		0746	5.85	.39		0748	.0140	.001						
5-31	.00	.051		0748	5.70	.58		0750	.0512	.001						
6-1	.00	.036		0750	.90	.61		0752	.0792	.004						
6-2	.00	.028		0752	2.10	.68		0754	.118	.007						
6-3	.00	.022		0755	2.60	.81		0757	.208	.015						
6-4	.00	.016		0758	1.20	.87		0800	.434	.030						
6-5	.00	.010		0802	.30	.89		0803	.636	.058						
6-6	.00	.007		0805	.20	.90		0805	.668	.080						
6-7	.12	.008		0808	.00	.90		0810	.596	.132						
6-8	.26	.009		0810	2.40	.98		0822	.401	.230						
6-9	.32	.012		0812	3.00	1.08		0833	.268	.293						
6-10	1.01	.139		0854	.00	1.08		0843	.144	.327						
6-11	.47	.081		0856	1.20	1.12		0850	.0903	.340						
6-12	.62	.145		0859	3.60	1.30		0857	.0617	.349						
6-13	.00	.051		0902	2.80	1.44		0859	.0585	.351						
6-14	.06	.043		0905	1.00	1.49		0900	.0617	.352						
6-15	T	.037		0907	1.80	1.55		0904	.0981	.357						
6-16	.00	.027		0909	3.30	1.66		0908	.163	.366						
6-17	.00	.021		0914	.00	1.66		0912	.329	.381						
6-18	1.45	.432		0916	1.50	1.71		0915	.536	.402						
6-19	.00	.054		0920	.15	1.72		0919	.668	.443						
6-20	.00	.039		0930	.12	1.74		0921	.684	.465						
6-21	.00	.030		0935	.24	1.76		0925	.636	.509						
6-22	.00	.026		0940	.00	1.76		0936	.408	.606						
6-23	.88	.142		0950	.12	1.78		0944	.258	.650						
6-24	.03	.035		1010	.18	1.84		0954	.154	.684						
6-25	.24	.026						1005	.0981	.706						
6-26	.14	.028						1020	.0617	.725						
6-27	.00	.014						Continued on next page								
6-28	.00	5/ T														
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 76.231. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.28-7. 5/ RUNOFF PRIOR TO 0745.																

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 177				26.28	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		



COSHOCOTON, OHIO WATERSHED 177

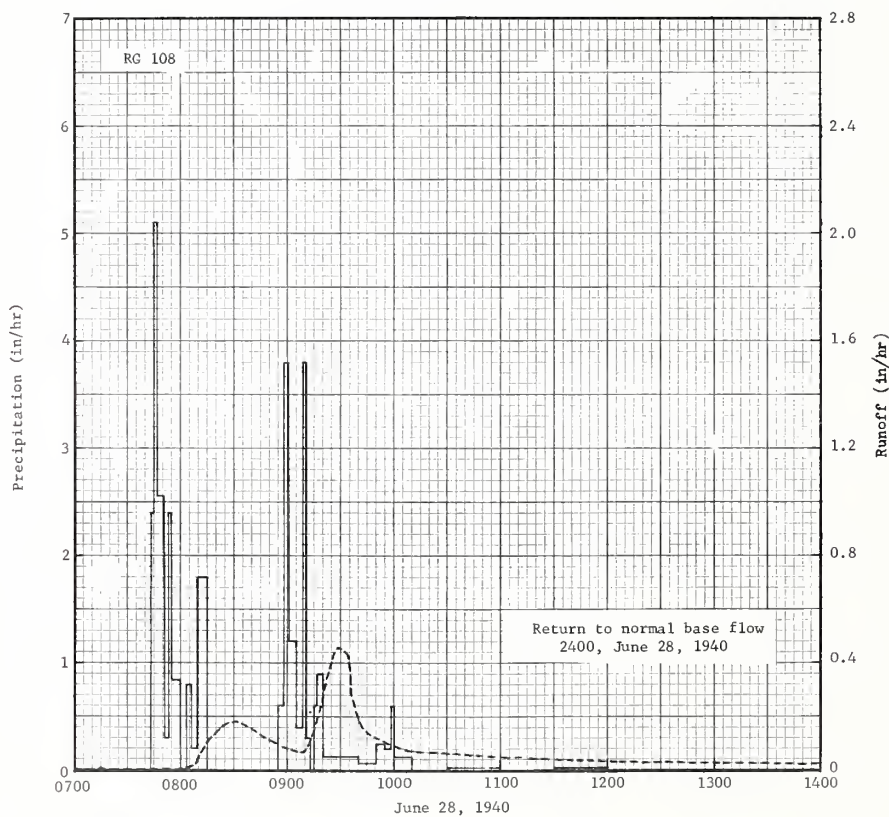
MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		AREA—74.2 ACRES					WATERSHED 183		26.29	
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P1/ Q	2.84 1.16E	3.43 1.83E	3.21 2.15	1.08 .75	2.64 .01	2.01 .01	2.72 .01	1.58 T	5.84 .04	1.80 .02	3.15 .41	2.09 .10	32.39 6.49			
STA AV2/ P (38-62) Q	2.81 1.53	2.58 1.56	3.28 2.01	3.39 1.63	3.80 .98	4.32 .81	4.11 .40	2.82 .22	2.71 .20	2.14 .09	2.45 .26	2.19 .71	36.60 10.40			
MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.26E		4/		4/		4/		4/		4/		4/	2-21	1.38E
MAXIMUMS FOR PERIOD OF RECORD																
19 38 TO 19 62	6-16 1946	2.58	6-16 1946	1.37	9-1 1950	1.58	6-16 1946	1.72	6-16 1946	1.93	6-16 1946	2.04	1-21 1959	2.19E	4-21 1961	3.10
Notes: Quality of records: Monthly P, good; monthly Q, excellent; annual maximum discharges and volumes, poor. Watershed conditions: 14% woodlot, 57% grassland, 29% cultivated, prevailing practices except for 9% of area stripped crop. 1/ Rain gage 119. 2/ Precipitation and runoff records began Mar. 1938. Part-year amounts for 1938 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No record due to ice in flume during high runoff period.																
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series and Pottsville series, occur beneath 24 in. to 72 in. of soil. The Allegheny series of rock strata underlie the upper 60% of the watershed. This consists primarily of units of sandstone interbedded with shale. The lower 40% of the watershed is underlain by clayey shale, coal, thin limestones and massive sandstone. Nine water-bearing aquifers outcrop along the stream channel in the watershed area. The flume is based upon the well-fractured coarse Massillon sandstone. Rock strata are irregularly inclined in a general west-northwest pattern with an average dip of approximately 1°. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 183					26.29			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	RC 119			RC	119											
5-29	.30	.012	6-28	0743	.00	.00	6-28	0747	.0007	.000						
5-30	.87	.139		0745	3.00	.10		0748	.0029	T						
5-31	.00	.076		0748	1.80	.19		0752	.0010	T						
6-1	.00	.041		0750	.90	.22		0758	.0040	.001						
6-2	.00	.030		0752	2.10	.29		0804	.0138	.001						
6-3	.00	.022		0754	.90	.32		0808	.0349	.003						
6-4	.00	.015		0802	.00	.32		0809	.0535	.003						
6-5	.00	.012		0806	.30	.34		0810	.0793	.005						
6-6	.00	.010		0808	1.80	.40		0814	.0720	.010						
6-7	.15	.012		0810	2.70	.49		0824	.144	.026						
6-8	.36	.019		0814	1.35	.58		0828	.154	.036						
6-9	.21	.021		0847	.00	.58		0832	.144	.046						
6-10	.67	.064		0850	.20	.59		0840	.0942	.062						
6-11	.43	.067		0855	.00	.59		0856	.0618	.083						
6-12	.73	.147		0858	.40	.61		0904	.0618	.091						
6-13	.00	.072		0900	4.50	.76		0910	.188	.102						
6-14	.11	.034		0902	1.20	.80		0914	.354	.120						
6-15	.02	.029		0905	.60	.83		0916	.374	.132						
6-16	.00	.019		0908	.40	.85		0920	.401	.158						
6-17	.00	.015		0911	3.40	1.02		0924	.361	.183						
6-18	1.40	.455		0915	.00	1.02		0928	.329	.206						
6-19	.00	.073		0920	.48	1.06		0930	.335	.217						
6-20	.00	.035		0940	.12	1.10		0940	.263	.268						
6-21	.00	.025		0950	.06	1.11		0952	.168	.310						
6-22	.00	.021		1005	.24	1.17		1008	.106	.345						
6-23	.74	.111		1010	.12	1.18		1020	.0866	.364						
6-24	T	.045						1047	.0535	.395						
6-25	.20	.022						1114	.0349	.415						
6-26	.17	.022						1158	.0202	.434						
Continued on next page																
6-27	.00	.019	NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 74.817. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.29-4. 5/ RUNOFF PRIOR TO 0747.													
6-28	.00	5/.006														



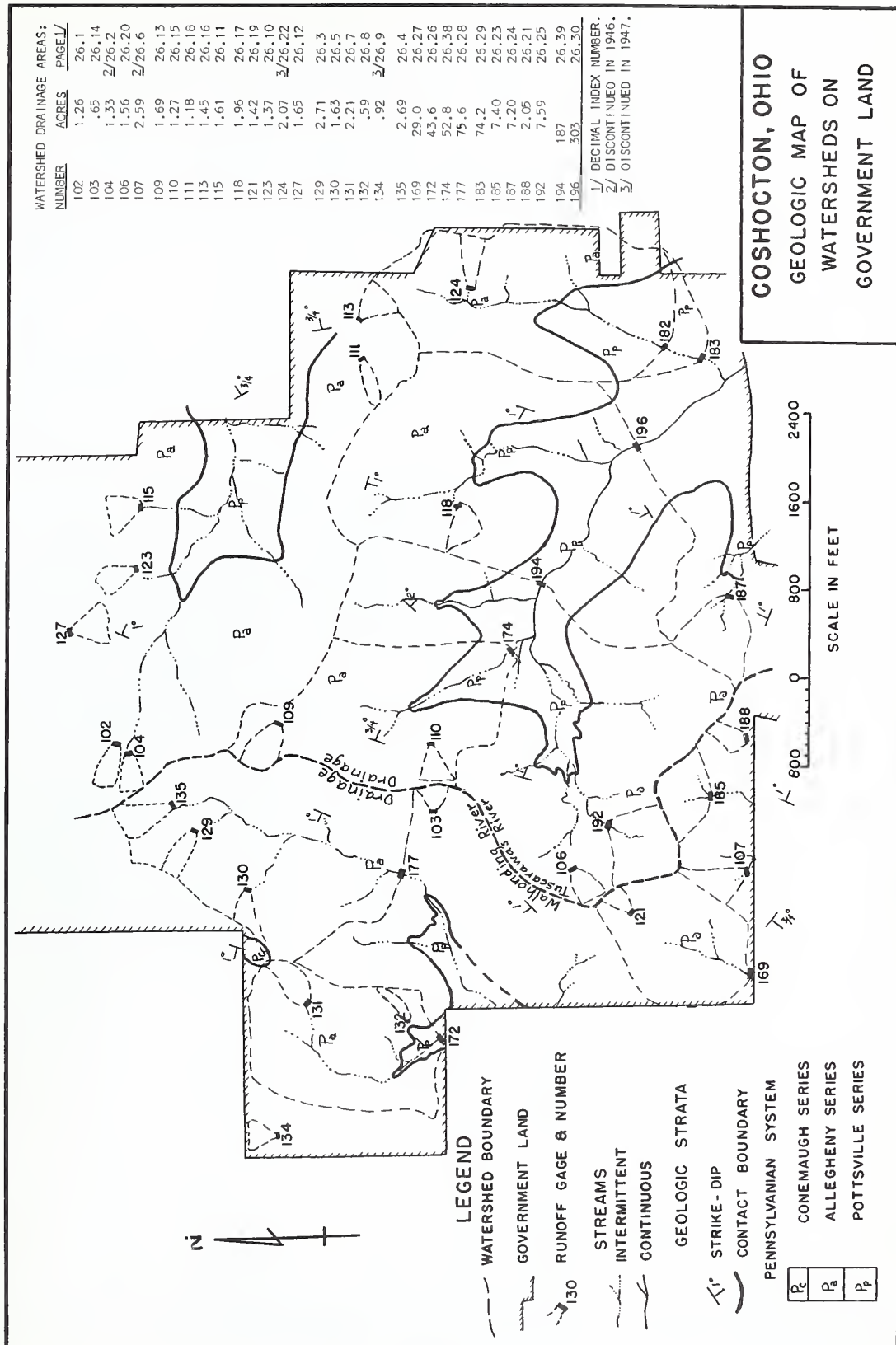
MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO			WATERSHED 196			26.30			
							AREA—303 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	2.94	3.59	3.11	1.19	2.54	1.87	2.54	1.64	5.62	2.20	3.07	2.16	32.47		
	Q	1.63	2.86	2.76	1.40	.27	.10	.07	.05	.15	.13	.64	.46	10.52		
STA AV2/	P	2.78	2.55	3.38	3.41	3.87	4.73	4.37	2.88	2.71	2.32	2.45	2.22	37.67		
	(37-62) Q	1.92	2.06	2.68	2.42	1.49	1.24	.65	.32	.27	.22	.43	1.01	14.71		
MEAN P 3/																
54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.22	2-23	.18	2-23	.29	2-23	.44	2-23	.51	2-23	.58	2-26	.94	2-21	2.18
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO	6-12	3.72	6-12	1.31E	6-12	1.44	6-16	1.63	1-21	2.06	1-21	2.92	1-20	3.21	4-21	4.38
1962	1957		1957		1957		1946		1959		1959		1959		1961	
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good: Watershed conditions: 27% woodlot, 50% grassland, 19% cultivated, 4% miscellaneous; prevailing practice. 1/ Arithmetic average of rain gages 108 and 116. 2/ Precipitation and runoff records began May 1937. Part-year amounts for 1937 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
LOCATION: (Revision) Tuscarawas River, Muskingum River Basin.																
GENERALLY REPRESENTS: (Revision) Allegheny-Gumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Allegheny series and Pottsville series, occur beneath 24 in. to 80 in. of soil. The ridges and knobs are underlain by the Lower Freeport sandstone. Rocks of the Allegheny series underlie approximately 85% of the watershed area. The upper portion of this sequence is comprised of sandstone and sandy shales with thin coals and clay horizon. The lower portion of the Allegheny series is predominantly silty to arenaceous shale. Rocks of the Pottsville series occur on the lower slopes and in the valleys of watershed 196. Two limestones, coals, and clays occur in this section separated by silty shale and an occasional sandstone lens. Numerous springs occur at the outcrop of the limestone horizons. The weir is bottomed in shale and clay overlying the Massillon sandstone. The geologic structure of this watershed is a localized basin. The rock strata are inclined from all points of the compass toward the lower third of the watershed. The ground water divide closely approximates the surface water divide. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1940 SELECTED RUNOFF EVENT							COSHOCTON, OHIO			WATERSHED 196			26.30			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28, 1940																
	2 RG 4/			RG	108											
5-29	.35	.0445	6-28	0743	.00	.00	6-28	0744	.0013	.0000						
5-30	.82	.1430		0745	2.40	.08		0756	.0027	.0003						
5-31	.00	.1920		0747	5.10	.25		0805	.0081	.0010						
6-1	.00	.1025		0751	2.55	.42		0808	.0245	.0017						
6-2	.00	.0607		0753	.30	.43		0810	.0553	.0031						
6-3	.00	.0406		0755	2.40	.51		0814	.101	.0082						
6-4	.00	.0270		0800	.84	.58		0818	.133	.0161						
6-5	.00	.0205		0803	.00	.58		0824	.170	.0312						
6-6	.00	.0177		0806	.80	.62		0830	.180	.0487						
6-7	.12	.0183		0809	.20	.63		0840	.157	.0768						
6-8	.30	.0248		0815	1.80	.81		0850	.113	.0990						
6-9	.19	.0230		0855	.00	.81		0906	.0684	.1219						
6-10	.75	.0771		0858	.40	.83		0910	.0733	.1266						
6-11	.49	.0870		0901	3.80	1.02		0914	.133	.1332						
6-12	.69	.1689		0905	1.20	1.10		0918	.231	.1454						
6-13	.00	.1251		0908	.40	1.12		0922	.340	.1643						
6-14	.08	.0642		0911	3.80	1.31		0926	.426	.1901						
6-15	.03	.0546		0913	.30	1.32		0928	.458	.2049						
6-16	.00	.0466		0915	.00	1.32		0934	.432	.2494						
6-17	.00	.0418		0917	.60	1.34		0936	.275	.2611						
6-18	1.58	.2517		0920	.80	1.38		0940	.183	.2760						
6-19	.00	.1005		0940	.12	1.42		0944	.145	.2870						
6-20	.00	.0504		0950	.06	1.43		0952	.116	.3042						
6-21	.00	.0377		0955	.24	1.45		1012	.0733	.3348						
6-22	.00	.0334		0958	.20	1.46		1028	.0671	.3501						
6-23	.86	.1142		1000	.60	1.48		1100	.0537	.3848						
6-24	.02	.0685		1010	.12	1.50		1140	.0363	.4146						
6-25	.18	.0420		1030	.00	1.50		1220	.0254	.4554						
6-26	.14	.0428		1100	.02	1.51		1400	.0189	.4717						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 305.52. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 26.30-4. 4/ ARITHMETIC AVERAGE OF RAIN GAGES 108 AND 116.																

1940			COSHOCOTON, OHIO				WATERSHED 196		26.30	
SELECTED RUNOFF EVENT										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 28, 1940 — Continued										
6-27	.00	.0318	6-28	1130	.00	1.51	6-28	1504	.0171	.4904
6-28	.00	1/.0097		1200	.02	1.52		1600	.0118	.5037
								1800	.0089	.5243
								2400	2/.0070	.5711
Watershed conditions: Mixed cover under prevailing practice. 6% of area in corn 30 in. high, 12% in wheat 36 in. high, 4% in oats 16 in. high, 0.5% in soybeans, 21% in meadow 13 in. high, 22% in pasture 10 in. high, 9% in pastured woodland, 17% in protected woodland, 1% idle, 4.5% farmsteads, 3% roads.										

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 305.52. 1/ RUNOFF PRIOR TO 0744. 2/ NORMAL BASE FLOW.



COSHOCOTON, OHIO WATERSHED 196



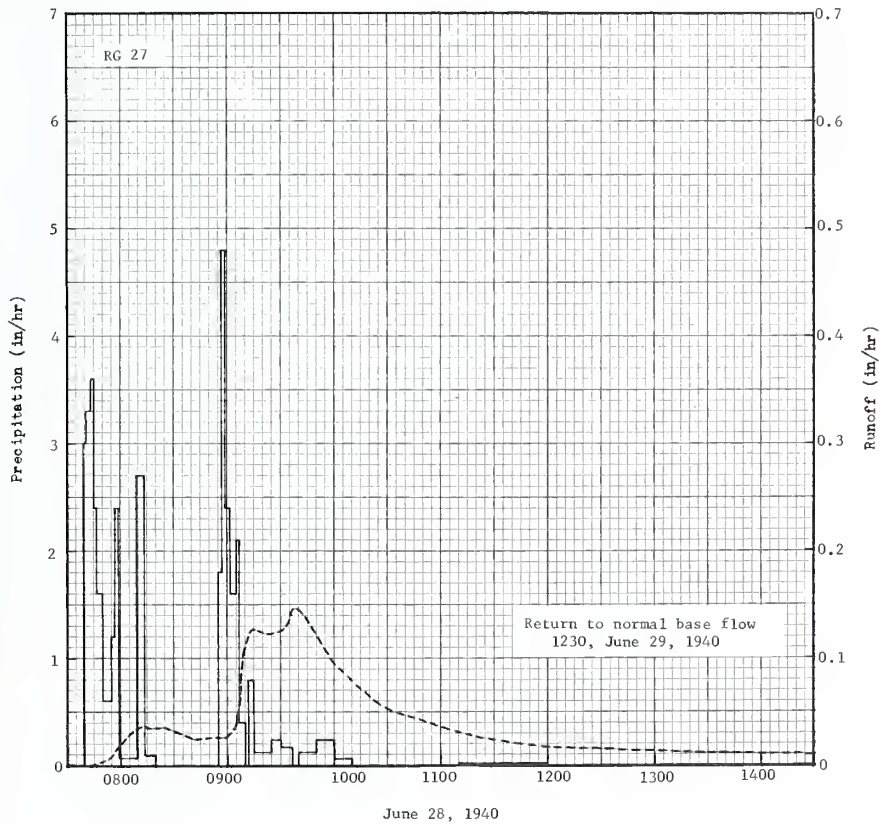
MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO LITTLE MILL CREEK AREA—122 ACRES						WATERSHED 10		26.31		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P 1/	3.18	3.50	3.32	1.06	2.47	1.98	2.48	1.61	5.65	1.92	3.03	2.06	32.26		
	Q	1.24E	1.59E	2.06	1.03	.18	.06	.04	.02	.17	.14	.59	.21	7.33		
	STA AV2/ P (39-62) Q	2.86	2.61	3.28	3.43	3.75	4.50	4.30	2.85	2.57	2.36	2.50	2.33	37.34		
		1.28	1.45	1.73	1.57	.90	.78	.41	.18	.13	.16	.26	.67	9.52		
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.08E		4/		4/		4/		4/		4/		4/	2-21	1.14E
MAXIMUMS FOR PERIOD OF RECORD																
19 39 to 62	6-28 1957	1.76E	6-28 1957	.98E	6-28 1957	1.39E	6-28 1957	1.80E	6-28 1957	1.99E	6-28 1957	2.14E	6-28 1957	2.25E	4-11 1948	2.82
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, poor. Watershed conditions: 21% cropland, 48% grassland, 25% woodland, 6% miscellaneous; conservation practice. 1/ Rain gage 27. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ No record due to ice in flume during high runoff period.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p.26.37-2.																
1940 SELECTED RUNOFF EVENT						COSHOCKTON, OHIO						WATERSHED 10		26.31		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	RG 27										Event of June 28-29, 1940					
	27			RG	27											
5-29	.44	.0075	6-28	0739	.00	.00	6-28	0743	.0004	.0000						
5-30	.96	.0953		0741	3.00	.10		0745	.0013	.0001						
5-31	.02	.0481		0743	3.30	.21		0748	.0028	.0003						
6-1	.00	.0140		0745	3.60	.33		0753	.0047	.0006						
6-2	.00	.0089		0747	2.40	.41		0755	.0080	.0008						
6-3	.00	.0048		0750	1.60	.49		0758	.0146	.0014						
6-4	.00	.0048		0755	.60	.54		0804	.0267	.0035						
6-5	.00	.0048		0757	1.20	.58		0810	.0350	.0066						
6-6	.00	.0048		0759	2.40	.66		0813	.0360	.0084						
6-7	.05	.0024		0809	.06	.67		0816	.0345	.0102						
6-8	.54	.0162		0813	2.70	.85		0824	.0355	.0155						
6-9	.66	.0387		0820	.09	.86		0842	.0241	.0243						
6-10	.77	.1990		0855	.00	.86		0856	.0263	.0302						
6-11	.55	.3058		0857	1.80	.92		0858	.0258	.0311						
6-12	.26	.0846		0859	4.80	1.08		0905	.0376	.0347						
6-13	.00	.0411		0902	2.40	1.20		0909	.109	.0396						
6-14	.06	.0198		0905	1.60	1.28		0914	.127	.0494						
6-15	.03	.0144		0907	2.10	1.35		0923	.122	.0682						
6-16	.00	.0108		0910	.40	1.37		0932	.127	.0868						
6-17	.00	.0096		0912	.00	1.37		0937	.146	.0981						
6-18	1.54	.3425		0915	.80	1.41		0940	.146	.1054						
6-19	.00	.0703		0925	.12	1.43		0950	.122	.1445						
6-20	.00	.0241		0930	.24	1.45		1000	.0959	.1625						
6-21	.00	.0144		0937	.17	1.47		1030	.0525	.2004						
6-22	.00	.0105		0940	.00	1.47		1100	.0366	.2226						
6-23	.81	.0682		0950	.12	1.49		1200	.0173	.2475						
6-24	T	.0413		1000	.24	1.53		1330	.0103	.2677						
6-25	.22	.0360		1010	.06	1.54		1600	.0062	.2876						
6-26	.26	.0259		1110	.00	1.54		2030	.0041	.3100						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 123.02. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.31-4.																

Cooperative Research Project of USDA and Ohio Agricultural Experiment Station

1940 SELECTED RUNOFF EVENT			COSHOCTON, OHIO				WATERSHED 10		26.31
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF		
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
6-27	.00	.0132	Event of June 28-29, 1940—Continued						
6-28	.00	1/.0031	6-28	1200	.01	1.55	6-28	2400	.3238
							6-29	0630	.3443
								1230	.3593
									2/.0022

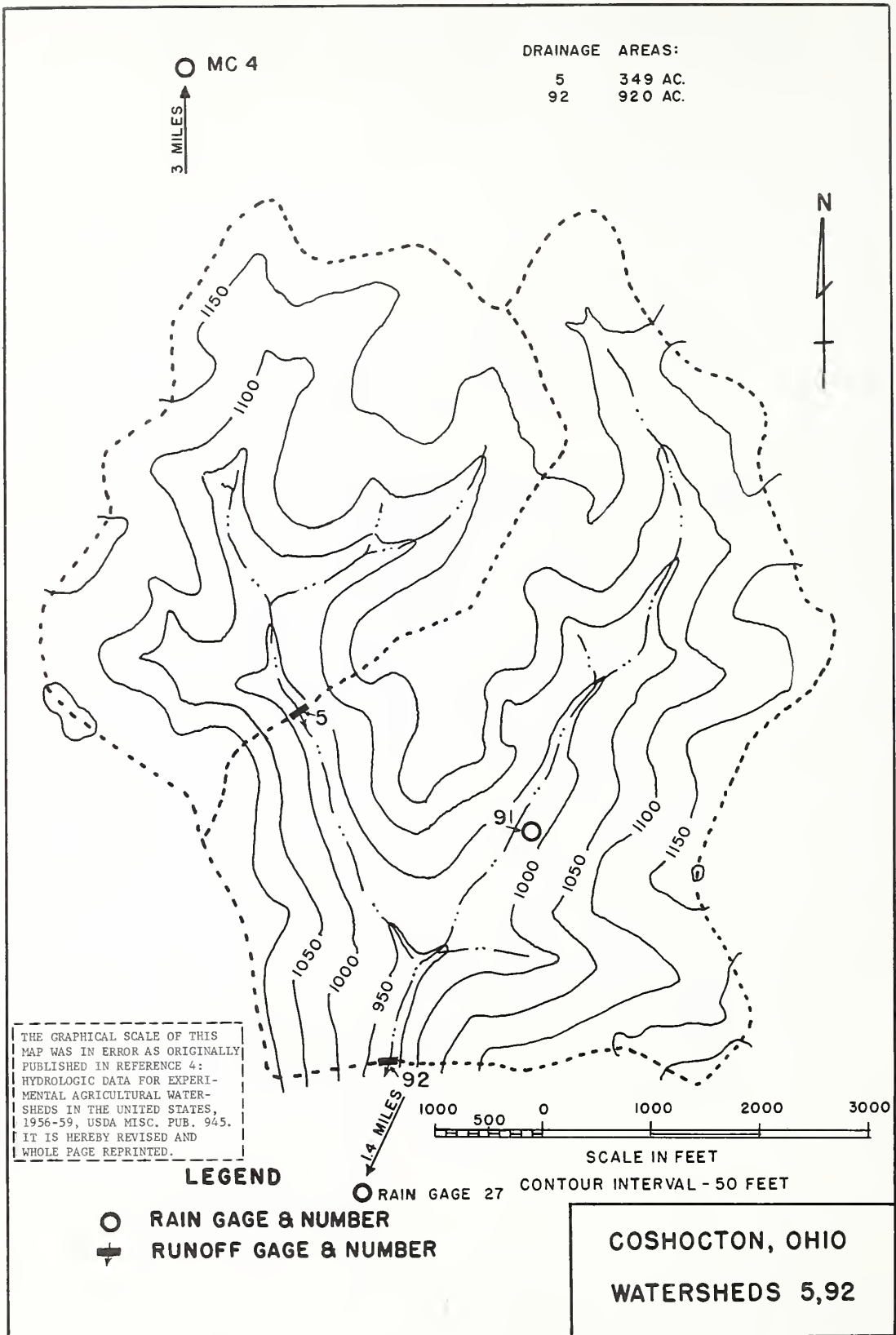
Watershed conditions: Mixed cover under prevailing practice. 7% of area in corn 30 in. high, 14% in wheat 36 in. high, 34% in meadow 13 in. high, 11% in pasture 10 in. high, 15% in pastured woodland, 10% in protected woodland, 3% idle, 4% farmsteads, 2% roads.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 123.02. 1/ RUNOFF PRIOR TO 0743, JUNE 28, 1940. 2/ NORMAL BASE FLOW.



COSHOCTON, OHIO WATERSHED 10

REVISION OF PREVIOUSLY PUBLISHED MAP



MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		LITTLE MILL CREEK		WATERSHED 5		26.32		
								AREA—349 ACRES						
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/ Q	3.20 1.49	3.62 1.90	3.18 2.26	1.16 1.17	2.15 .21	2.44 .08	2.76 .04	1.40 T	5.78 .12	2.01 .08	3.00 .40	2.11 .20	32.81 7.95
STA AV2/ P (40-62) 0		2.86 1.55	2.54 1.61	3.25 2.11	3.39 1.84	3.84 1.16	4.39 .89	4.31 .50	2.90 .22	2.67 .13	2.28 .19	2.58 .34	2.36 .77	37.37 11.31
MEAN P 3/ 54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.08	2-23	.08	2-23	.12	2-23	.20	2-23	.24	2-25	.36	2-26	.54	2-21	1.37

MAXIMUMS FOR PERIOD OF RECORD																
1940 to 1962	6-28 1957	1.09	6-28 1957	.77	6-28 1957	1.04	6-28 1957	1.38	6-28 1957	1.58	1-21 1959	2.31	1-20 1959	2.64	1-20 1959	3.04

Notes: Quality of records: Monthly P and Q, fair; annual maximum discharges and volumes, fair. Watershed conditions: 20% cropland, 54% grassland, 23% woodland, 3% miscellaneous; improved practice. 1/ Rain gage 91. 2/ Precipitation and runoff records began Jan. 1940. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

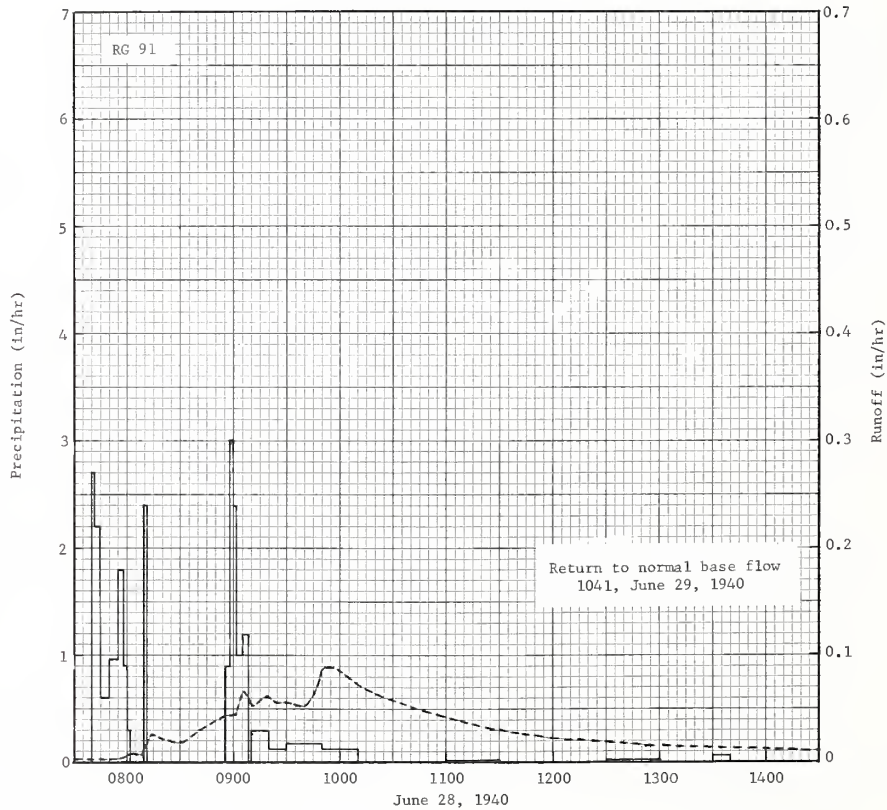
GEOLOGY: Sedimentary rocks of the Pennsylvania system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 60% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed slopes. The lower 35% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.37-2.

1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 5		26.32	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
OATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	OATE MO-OAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	OATE MO-OAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 28-29, 1940											
	RG 91			RG 91							
5-29	.42	.0222	6-28	0740	.00	.00	6-28	0748	.0032	.0000	
5-30	1.00	.0991		0742	2.70	.09		0802	.0078	.0009	
5-31	.02	.0873		0745	2.20	.20		0804	.0092	.0012	
6-1	.00	.0604		0750	.60	.25		0806	.0078	.0015	
6-2	.00	.0488		0755	.96	.33		0808	.0066	.0017	
6-3	.00	.0413		0758	1.80	.42		0812	.0163	.0024	
6-4	.00	.0354		0800	.90	.45		0814	.0257	.0031	
6-5	.00	.0277		0802	.30	.46		0820	.0214	.0054	
6-6	.00	.0235		0809	.00	.46		0828	.0188	.0081	
6-7	.09	.0240		0812	2.40	.58		0832	.0188	.0094	
6-8	.82	.0290		0856	.00	.58		0844	.0324	.0144	
6-9	.70	.0541		0858	.90	.61		0856	.0438	.0221	
6-10	.80	.1408		0900	3.00	.71		0902	.0438	.0265	
6-11	.60	.2113		0902	2.40	.79		0906	.0673	.0302	
6-12	.34	.1385		0905	1.00	.84		0912	.0523	.0362	
6-13	.00	.1006		0908	1.20	.90		0918	.0625	.0419	
6-14	.06	.0682		0910	.00	.90		0924	.0563	.0478	
6-15	.07	.0572		0920	.30	.95		0932	.0563	.0553	
6-16	.00	.0446		0930	.12	.97		0940	.0523	.0625	
6-17	.00	.0373		0950	.18	1.03		0944	.0608	.0663	
6-18	1.29	.1850		1010	.12	1.07		0948	.0787	.0709	
6-19	.00	.0865		1100	.00	1.07		0952	.0887	.0765	
6-20	.00	.0653		1130	.02	1.08		0956	.0887	.0824	
6-21	.00	.0493		1230	.00	1.08		1008	.0747	.0988	
6-22	.00	.0413		1300	.02	1.09		1020	.0639	.1126	
6-23	.93	.0785		1330	.00	1.09		1057	.0438	.1458	
6-24	.08	.0674		1340	.06	1.10		1125	.0307	.1628	
6-25	.84	.2355						1157	.0221	.1766	
6-26	.12	.1268						1257	.0148	.1949	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 351.91. FOR CONTOUR MAP OF WATERSHED, SEE REVISED MAP ON PREVIOUS PAGE.

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 5		26.32
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF		
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
Event of June 28-29, 1940—Continued									
6-27	.00	.0828					6-28	1505	.0095
6-28	.00	1.0248						1757	.0072
								2400	.0056
Watershed conditions: Mixed cover under prevailing practice. 7% of area in corn 30 in. high, 0.2% in potatoes, 12% in wheat 36 in. high, 3% in oats 16 in. high, 0.8% in soybeans, 24% in meadow 13 in. high, 24.5% in pasture 10 in. high, 7% in pastured woodland, 14.5% in protected woodland, 1% reforested, 1.5% idle, 3% farmstead, 1.5% roads.							6-29	1041	2/.0046
									.3349

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 351.91. 1/ RUNOFF PRIOR TO 0748, JUNE 28, 1940. 2/ NORMAL BASE FLOW.

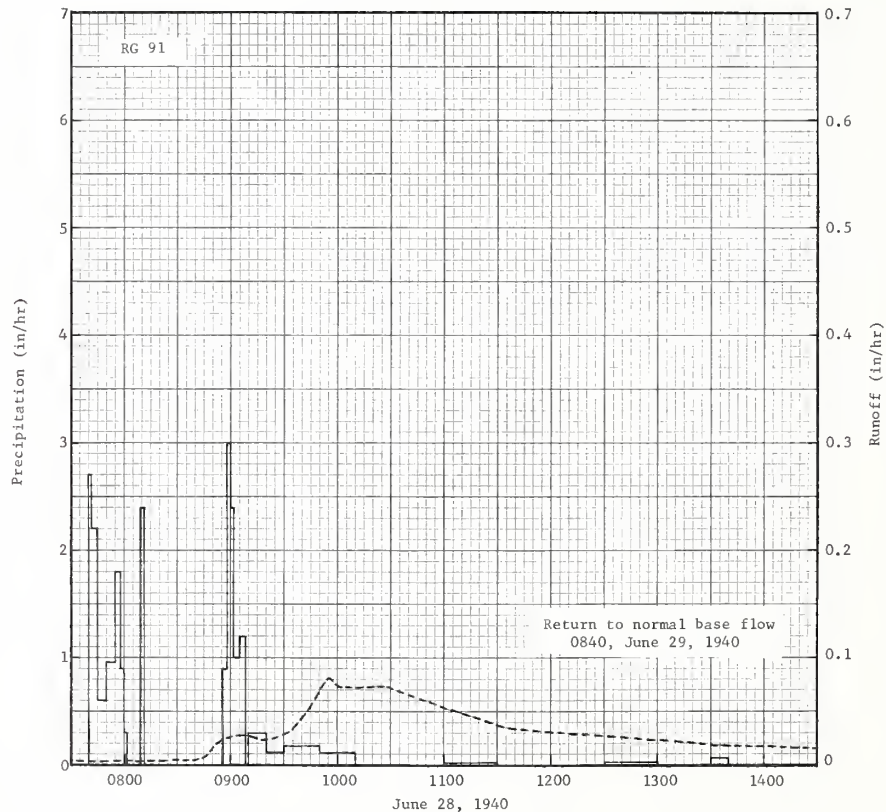


COSHOCOTON, OHIO WATERSHED 5

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO LITTLE MILL CREEK WATERSHED 92 AREA—920 ACRES (1.44 SQ. MILES)										26.33
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	3.20	3.62	3.18	1.16	2.15	2.44	2.76	1.40	5.78	2.01	3.00	2.11	32.81		
	Q	1.70	2.25	2.48	1.19	.23	.09	.05	T	.14	.09	.50	.27	8.99		
	STA AV2/ P	2.85	2.62	3.27	3.41	3.74	4.45	4.35	2.86	2.59	2.36	2.50	2.32	37.32		
	(39-62) Q	1.67	1.84	2.24	2.00	1.19	.95	.49	.20	.14	.20	.39	.88	12.19		
MEAN P 3/		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.10	2-23	.09	2-23	.14	2-23	.23	2-23	.28	2-26	.39	2-26	.63	2-21	1.60
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-28	.62	6-28	.52	6-28	.82	6-28	1.24	1-21	1.60	1-21	2.41	1-20	2.71	4-11	3.41
1962	1957		1957		1957		1957		1959		1959		1959		1948	
Notes: Quality of records: Monthly P and Q, fair; annual maximum discharges and volumes, fair. Watershed conditions: 16% cropland, 59% grassland, 21% woodland, 4% miscellaneous; improved practice. 1/ Rain gage 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Connemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Connemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and springs development on the upper watershed slopes. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.37-2.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO				WATERSHED 92				26.33		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28-29, 1940																
	RG 91			RG	91											
5-29	.42	.0187	6-28	0740	.00	.00	6-28	0810	.0029	.0000						
5-30	1.00	.0490		0742	2.70	.09		0840	.0030	.0015						
5-31	.02	.1062		0745	2.20	.20		0844	.0056	.0018						
6-1	.00	.0682		0750	.60	.25		0848	.0113	.0023						
6-2	.00	.0482		0755	.96	.33		0852	.0199	.0033						
6-3	.00	.0384		0758	1.80	.42		0900	.0258	.0065						
6-4	.00	.0272		0800	.90	.45		0906	.0283	.0092						
6-5	.00	.0231		0802	.30	.46		0910	.0270	.0110						
6-6	.00	.0176		0809	.00	.46		0920	.0230	.0152						
6-7	.09	.0194		0812	2.40	.58		0935	.0330	.0218						
6-8	.82	.0289		0856	.00	.58		0945	.0537	.0288						
6-9	.70	.0683		0858	.90	.61		0950	.0704	.0340						
6-10	.80	.1388		0900	3.00	.71		0956	.0804	.0415						
6-11	.60	.2230		0902	2.40	.79		1000	.0728	.0466						
6-12	.34	.1577		0905	1.00	.84		1012	.0716	.0611						
6-13	.00	.1348		0908	1.20	.90		1020	.0728	.0707						
6-14	.06	.0755		0910	.00	.90		1028	.0728	.0804						
6-15	.07	.0602		0920	.30	.95		1100	.0526	.1143						
6-16	.00	.0480		0930	.12	.97		1140	.0337	.1426						
6-17	.00	.0363		0950	.18	1.03		1240	.0258	.1707						
6-18	1.29	.2032		1010	.12	1.07		1335	.0189	.1902						
6-19	.00	.1462		1100	.00	1.07		1420	.0161	.2032						
6-20	.00	.0689		1130	.02	1.08		1520	.0134	.2180						
6-21	.00	.0485		1230	.00	1.08		1620	.0117	.2304						
6-22	.00	.0386		1300	.02	1.09		1720	.0104	.2413						
6-23	.93	.0692		1330	.00	1.09		1820	.0095	.2512						
6-24	.08	.1089		1340	.06	1.10		1930	.0087	.2617						
6-25	.84	.2036						2120	.0079	.2769						
6-26	.12	.1740						2400	.0072	.2968						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 927.64. FOR CONTOUR MAP OF WATERSHED, SEE REVISED PAGE 26.32-5 OF THIS VOLUME.																

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 92		26.33
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF		
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
6-27	.00	.0975	<u>Event of June 28-29, 1940—Continued</u>				6-29	0400	.0062
6-29	.00	1.0245						0840	2/.0056
Watershed conditions: Mixed cover under prevailing practice. 6% of area in corn 30 in. high, 0.1% in potatoes, 6% in wheat 36 in. high, 3.4% in oats 16 in. high, 1% in soybeans, 26% in meadow 13 in. high, 27% in pasture 10 in. high, 8% in pastured woodland, 12% in protected woodland, 0.5% reforested, 5% idle, 3% farmstead, 2% roads.									.3234
									.3510

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 927.64. 1/ RUNOFF PRIOR TO 0810, JUNE 29, 1940. 2/ NORMAL BASE FLOW.

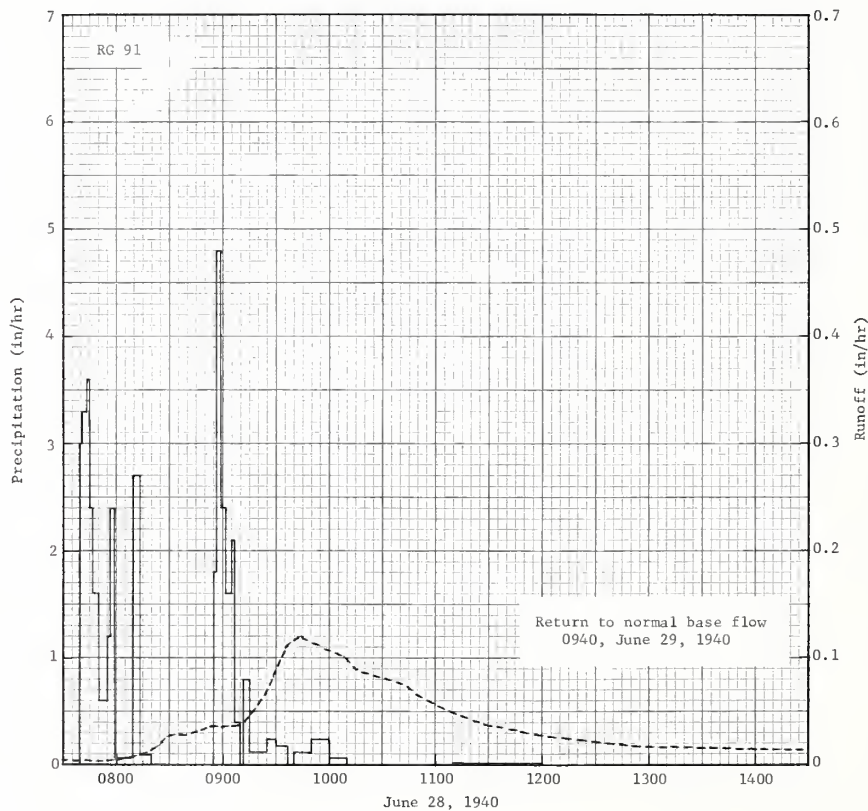


COSHOCOTON, OHIO WATERSHED 92

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO LITTLE MILL CREEK WATERSHED 94 AREA—1,520 ACRES (2.37 SQ. MILES)										26.34
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	3.20	3.62	3.18	1.16	2.15	2.44	2.76	1.40	5.78	2.01	3.00	2.11	32.81		
	Q	1.80	2.43	2.73	1.30	.30	.12	.07	.01	.19	.13	.58	.28	9.94		
STA AV2/ P (39-62) Q	P	2.85	2.62	3.27	3.41	3.74	4.45	4.35	2.86	2.59	2.36	2.50	2.32	37.32		
	Q	1.67	1.81	2.23	1.97	1.19	1.01	.52	.24	.15	.20	.38	.84	12.21		
MEAN P 3/ 54 YR	P	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.11	2-23	.09	2-23	.16	2-23	.26	2-23	.32	2-26	.41	2-26	.70	2-21	1.72
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-28 1957	.92	6-28 1957	.77	6-28 1957	1.22	6-28 1957	1.79	1-21 1959	2.04	1-21 1959	2.95	1-20 1959	3.27	1-20 1959	3.67
Notes: Quality of records: Monthly P and Q, fair; annual maximum discharges and volumes, fair. Watershed conditions: 15% cropland, 57% grassland, 24% woodland, 4% miscellaneous; improved practice. 1/ Rain gage 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed slopes. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p.26.37-2.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO WATERSHED 94										26.34
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28-29, 1940																
	2 RG 4/			RG	91											
5-29	.43	.0181	6-28	0739	.00	.00	6-28	0748	.0022	.0000						
5-30	.98	.0976		0741	3.00	.10		0800	.0037	.0005						
5-31	.02	.0996		0743	3.30	.21		0812	.0083	.0017						
6-1	.00	.0530		0745	3.60	.33		0820	.0135	.0031						
6-2	.00	.0416		0747	2.40	.41		0824	.0184	.0042						
6-3	.00	.0310		0750	1.60	.49		0828	.0261	.0057						
6-4	.00	.0248		0755	.60	.54		0836	.0293	.0094						
6-5	.00	.0201		0757	1.20	.58		0840	.0293	.0113						
6-6	.00	.0174		0759	2.40	.66		0856	.0361	.0201						
6-7	.07	.0174		0809	.06	.67		0900	.0350	.0224						
6-8	.68	.0327		0813	2.70	.85		0908	.0372	.0272						
6-9	.68	.0709		0820	.09	.86		0916	.0486	.0330						
6-10	.78	.1547		0855	.00	.86		0920	.0558	.0364						
6-11	.58	.2428		0857	1.80	.92		0924	.0667	.0405						
6-12	.30	.1449		0859	4.80	1.08		0928	.0811	.0454						
6-13	.00	.1057		0902	2.40	1.20		0932	.0974	.0514						
6-14	.06	.0664		0905	1.60	1.28		0936	.111	.0583						
6-15	.05	.0511		0907	2.10	1.35		0944	.120	.0737						
6-16	.00	.0390		0910	.40	1.37		0952	.113	.0893						
6-17	.00	.0329		0912	.00	1.37		1000	.107	.1039						
6-18	1.42	.2803		0915	.80	1.41		1008	.101	.1178						
6-19	.00	.1083		0925	.12	1.43		1016	.0889	.1305						
6-20	.00	.0567		0930	.24	1.45		1028	.0811	.1475						
6-21	.00	.0433		0937	.17	1.47		1044	.0719	.1679						
6-22	.00	.0372		0940	.00	1.47		1052	.0637	.1769						
6-23	.87	.0742		0950	.12	1.49		1100	.0573	.1850						
6-24	.04	.0741		1000	.24	1.53		1112	.0486	.1956						
6-25	.53	.1468		1010	.06	1.54		1132	.0372	.2099						
6-26	.19	.1066		1110	.00	1.54		1148	.0308	.2190						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1,532.7. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.34-5. 4/ ARITHMETIC AVERAGE OF RAIN GAGES 91 AND 27.																

1940 SELECTED RUNOFF EVENT			COSHOCTON, OHIO				WATERSHED 94 26.34							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)				
Event of June 28-29, 1940—Continued														
6-27	.00	.0634	6-28	1200	.01	1.55	6-28	1204	.0261	.2266				
6-28	.00	1/.0176						1252	.0184	.2440				
								1400	.0137	.2620				
								1556	.0100	.2847				
								1920	.0074	.3138				
Watershed conditions: Mixed cover under prevailing practice. 5.9% of area in corn 30 in. high, 0.2% in potatoes, 5.5% in wheat 36 in. high, 2% in oats 16 in. high, 1% in soybeans, 25% in meadow 13 in. high, 27% in pasture 10 in. high, 9.8% in pastured woodland, 14% in protected woodland, 0.6% reforested, 5% idle, 2.5% farmstead, 1.5% roads.								2400	.0060	.3447				
								6-29	0940	2/.0046	.3954			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1532.7. 1/ RUNOFF PRIOR TO 0748, JUNE 28, 1940. 2/ NORMAL BASE FLOW.

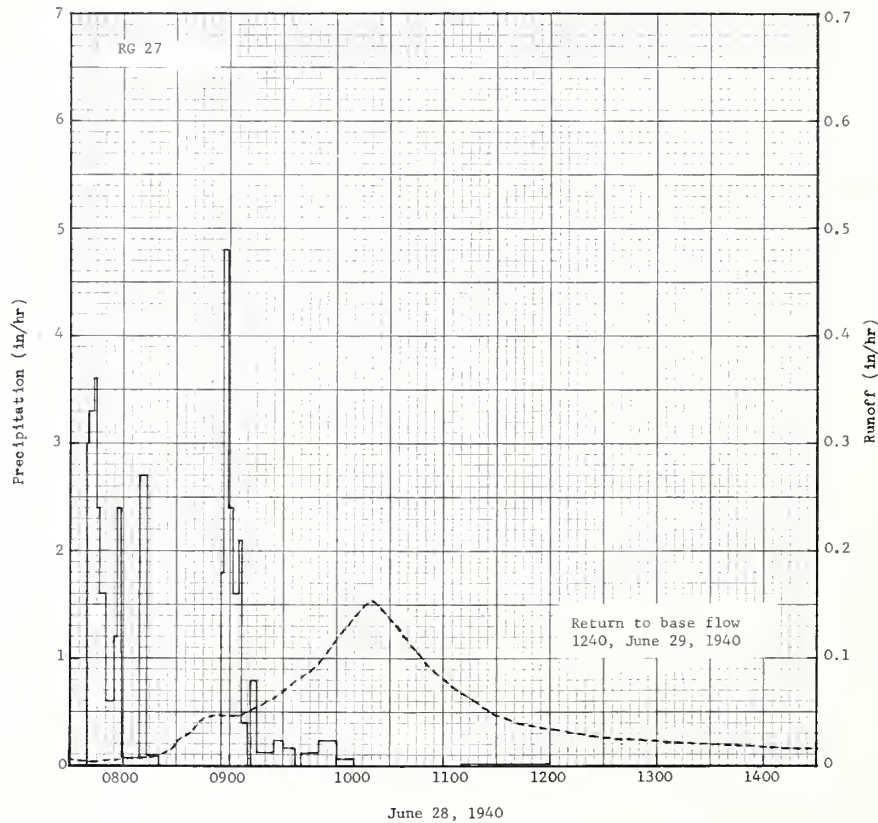


COSHOCTON, OHIO WATERSHED 94

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO LITTLE MILL CREEK WATERSHED 95 26.35 AREA—2,570 ACRES (4.02 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	3.18	3.50	3.32	1.06	2.47	1.96	2.48	1.61	5.65	1.92	3.03	2.06	32.26		
	Q	1.63	2.14	2.62	1.34	.30	.10	.04	.01	.16	.11	.55	.31	9.31		
STA AV2/	P	2.86	2.61	3.28	3.43	3.75	4.50	4.30	2.85	2.57	2.36	2.50	2.33	37.34		
	Q	1.63	1.79	2.25	2.02	1.19	.95	.49	.21	.14	.19	.37	.83	12.06		
MEAN P 3/																
54 YR		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.08	2-23	.08	2-23	.14	2-23	.23	2-23	.28	2-23	.34	2-20	.64	2-21	1.51
MAXIMUMS FOR PERIOD OF RECORD																
19 39 TO	6-28	.61	6-28	.56	6-28	.95	6-28	1.43	1-21	1.92E	1-21	2.78E	1-21	3.07E	1-20	3.46E
19 62	1957		1957		1957		1957		1959		1959		1959		1959	
Notes: Quality of records: Monthly P, fair; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: 15% cropland, 55% grassland, 26% woodland, 4% miscellaneous; improved practice. 1/ Arithmetic average of rain gages 27 and 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).																
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed slopes. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.37-2.																
1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO WATERSHED 95 26.35										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 28-29, 1940																
2 RG 4/				RG	27											
5-29	.43	.0193	6-28	0739	.00	.00	6-28	0740	.0019	.0000						
5-30	.98	.1134		0741	3.00	.10		0755	.0027	.0006						
5-31	.02	.1144		0743	3.30	.21		0808	.0047	.0014						
6-1	.00	.0595		0745	3.60	.33		0816	.0069	.0020						
6-2	.00	.0438		0747	2.40	.41		0824	.0103	.0031						
6-3	.00	.0325		0750	1.60	.49		0828	.0175	.0040						
6-4	.00	.0238		0755	.60	.54		0832	.0242	.0054						
6-5	.00	.0116		0757	1.20	.58		0840	.0328	.0091						
6-6	.00	.0147		0759	2.40	.66		0844	.0421	.0115						
6-7	.07	.0167		0809	.06	.67		0854	.0475	.0190						
6-8	.68	.0317		0813	2.70	.85		0856	.0467	.0206						
6-9	.68	.0659		0820	.09	.86		0905	.0467	.0276						
6-10	.78	.1937		0855	.00	.86		0925	.0618	.0450						
6-11	.58	.2869		0857	1.80	.92		0935	.0772	.0567						
6-12	.30	.1429		0859	4.80	1.08		0950	.0953	.0780						
6-13	.00	.1036		0902	2.40	1.20		1000	.1189	.0855						
6-14	.06	.0656		0905	1.60	1.28		1015	.1494	.1294						
6-15	.05	.0498		0907	2.10	1.35		1020	.1529	.1420						
6-16	.00	.0386		0910	.40	1.37		1025	.1475	.1545						
6-17	.00	.0298		0912	.00	1.37		1035	.1282	.1772						
6-18	1.42	.3014		0915	.80	1.41		1045	.1058	.1967						
6-19	.00	.1169		0925	.12	1.43		1055	.0888	.2132						
6-20	.00	.0604		0930	.24	1.45		1110	.0687	.2327						
6-21	.00	.0421		0937	.17	1.47		1116	.0602	.2390						
6-22	.00	.0376		0940	.00	1.47		1130	.0479	.2512						
6-23	.87	.0741		0950	.12	1.49		1145	.0390	.2620						
6-24	.04	.0796		1000	.24	1.53		1200	.0332	.2710						
6-25	.53	.1021		1010	.06	1.54		1230	.0258	.2872						
6-26	.19	.0866		1110	.00	1.54		1310	.0202	.3025						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2,591.4. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.34-5. 4/ ARITHMETIC AVERAGE OF RAIN GAGES 27 AND 91.																

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 95			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 28-29, 1940—Continued										
6-27	.00	.0536	6-28	1200	.01	1.55	6-28	1420	.0152	.3199
6-28	.00	1/.0142						1540	.0121	.3382
								1740	.0096	.3596
								2000	.0080	.3801
								2400	.0068	.4093
Watershed conditions: Mixed cover under prevailing practice. 6% of area in corn 30 in. high, 0.2% in potatoes, 6% in wheat 36 in. high, 1.8% in oats 16 in. high, 0.6% in soybeans, 24% in meadow 13 in. high, 23% in pasture 10 in. high, 9% in pasture woodland, 17% in protected woodland, 0.4% reforested, 8% idle, 2% farmstead, 2% roads.							6-29	0340	.0061	.4343
								0700	.0055	.4536
								1240	2/.0047	.4825

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2,591.4. 1/ RUNOFF PRIOR TO 0740, JUNE 28, 1940. 2/ NORMAL BASE FLOW.



COSHOCOTON, OHIO WATERSHED 95

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO LITTLE MILL CREEK WATERSHED 97 AREA—4,580 ACRES (7.16 SQ. MILES)								26.36
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962 P1/ Q	3.18 1.53	3.50 2.22	3.32 2.47	1.06 1.12	2.47 .24	1.98 .07	2.48 .03	1.61 .01	5.65 .10	1.92 .03	3.03 .54	2.06 .28	32.26 8.69	
STA AV2/ P (37-62) Q	3.08 1.94	2.55 1.77	3.31 2.27	3.47 2.09	3.82 1.22	4.60 1.05	4.31 .55	2.82 .24	2.54 .14	2.35 .17	2.46 .37	2.33 .87	37.64 12.68	
MEAN P 3/ 54 YR	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.09	2-23	.08	2-23	.16	2-23	.29	2-23	.36	2-25	.40	2-26	.72	2-21	1.68

MAXIMUMS FOR PERIOD OF RECORD

1937 TO	6-28	.72	6-28	.66	6-28	1.15	1-24	1.89	1-21	3.24	1-21	3.24	1-20	3.54	1-18	6.77
1962	1957		1957		1957		1937		1959		1959		1959		1937	

Notes: Quality of records: Monthly P, fair; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: 18% cropland, 50% grassland, 28% woodland, 4% miscellaneous; improved practice. 1/ Arithmetic average of rain gages 27 and 91. 2/ Precipitation and runoff records began Jan. 1937. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.

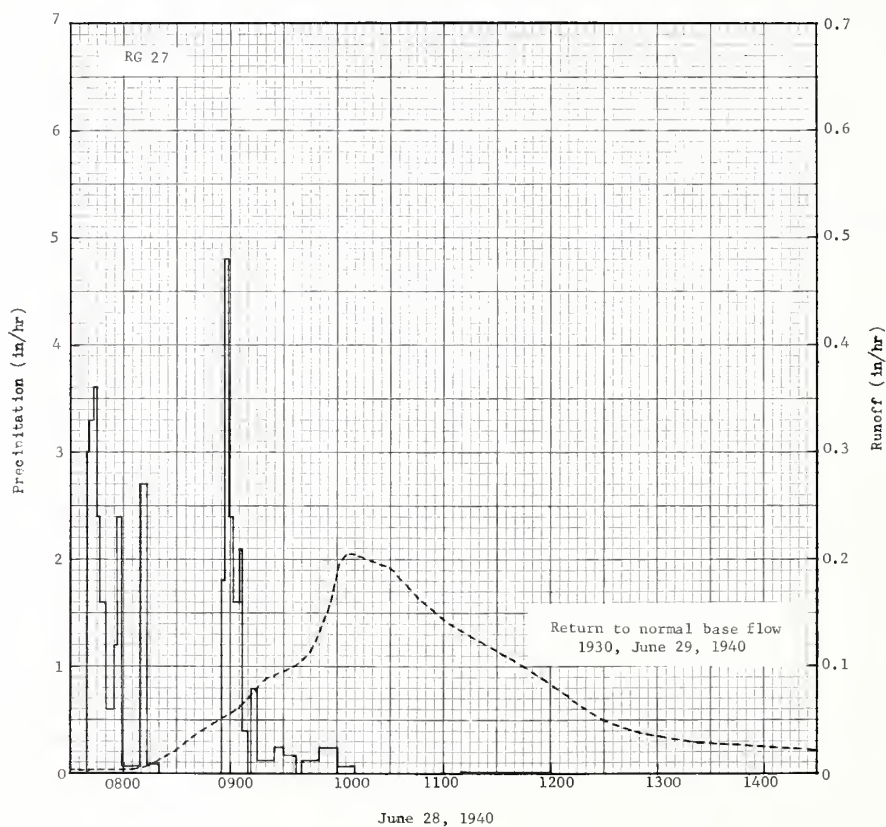
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).

GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed slopes. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.37-2.

1940 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 97		26.36	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 28-29, 1940											
	4 RG 4/			RG	27						
5-29	.45	.0197	6-28	0739	.00	.00	6-28	0740	.0015	.0000	
5-30	.88	.1165		0741	3.00	.10		0803	.0031	.0009	
5-31	.02	.1265		0743	3.30	.21		0815	.0090	.0021	
6-1	.00	.0575		0745	3.60	.33		0830	.0216	.0058	
6-2	.00	.0418		0747	2.40	.41		0845	.0409	.0137	
6-3	.00	.0317		0750	1.60	.49		0905	.0606	.0310	
6-4	.00	.0264		0755	.60	.54		0920	.0896	.0500	
6-5	.00	.0214		0757	1.20	.58		0935	.100	.0734	
6-6	.00	.0180		0759	2.40	.66		0945	.114	.0912	
6-7	.07	.0169		0809	.06	.67		0955	.152	.1128	
6-8	.48	.0289		0813	2.70	.85		1000	.191	.1271	
6-9	.50	.0489		0820	.09	.86		1005	.204	.1435	
6-10	1.03	.2546		0855	.00	.86		1010	.204	.1605	
6-11	.62	.3927		0857	1.80	.92		1020	.199	.1941	
6-12	.22	.1634		0859	4.80	1.08		1030	.192	.2267	
6-13	.00	.1038		0902	2.40	1.20		1045	.163	.2717	
6-14	.06	.0568		0905	1.60	1.28		1100	.144	.3098	
6-15	.04	.0434		0907	2.10	1.35		1120	.123	.3542	
6-16	.00	.0336		0910	.40	1.37		1140	.105	.3922	
6-17	.00	.0281		0912	.00	1.37		1210	.0721	.4365	
6-18	1.48	.3507		0915	.80	1.41		1230	.0496	.4565	
6-19	.00	.1325		0925	.12	1.43		1320	.0296	.4879	
6-20	.00	.0566		0930	.24	1.45		1430	.0208	.5165	
6-21	.00	.0393		0937	.17	1.47		1630	.0141	.5502	
6-22	.00	.0336		0940	.00	1.47		1830	.0114	.5752	
6-23	.86	.0795		0950	.12	1.49		2120	.0093	.6042	
6-24	.02	.0872		1000	.24	1.53		2400	.0079	.6272	
6-25	.36	.0746		1010	.06	1.54					
6-26	.18	.0664		1110	.00	1.54	6-29	0420	.0068	.6591	

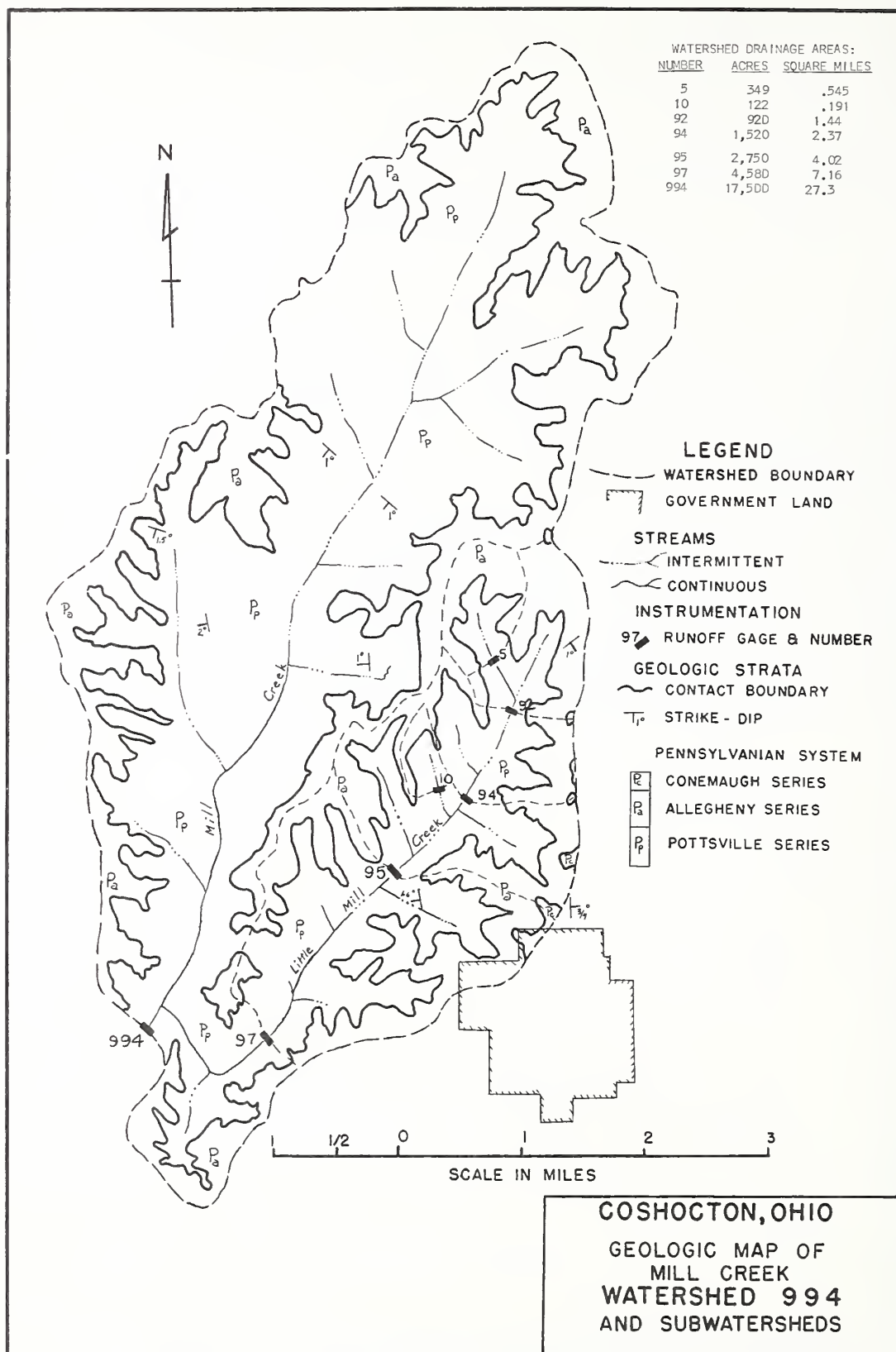
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4,618.1. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.34-5. 4/ ARITHMETIC AVERAGE OF RAIN GAGES 27, 54, 56, AND 91.

1940 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 97 26.36			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 28-29, 1940—Continued										
6-27	.00	.0418	6-28	1200	.01	1.55	6-29	1220	.0051	.7060
6-28	.00	<u>1</u> /.0110						1930	<u>2</u> /.0043	.7400
Watershed conditions: Mixed cover under prevailing practice. 6% of area in corn 30 in. high, 0.2% in potatoes, 6% in wheat 36 in. high, 2% in oats 16 in. high, 0.7% in soybeans, 24% in meadow 13 in. high, 24% in pasture 10 in. high, 7% in pastured woodland, 17% in protected woodland, 1.6% reforested, 8% idle, 2% farmstead, 1.5% roads.										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4,618.1. <u>1</u> / RUNOFF PRIOR TO 0740, JUNE 28, 1940. <u>2</u> / NORMAL BASE FLOW.										



COSHOCOTON, OHIO WATERSHED 97

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO MILL CREEK WATERSHED 994 26.37 AREA—17,500 ACRES (27.3 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P1/	3.18	3.50	3.32	1.06	2.47	1.98	2.48	1.61	5.65	1.92	3.03	2.06	32.26
	Q2/	2.04	2.47	2.69	1.40	.27	.15	.06	.01	.09	.10	.62	.35	10.25
STA AV3/ P		3.08	2.55	3.31	3.47	3.82	4.60	4.31	2.82	2.54	2.39	2.48	2.35	37.72
(36-62)Q2/		2.08	1.98	2.31	2.15	1.33	1.11	.63	.27	.17	.23	.45	.93	13.64
MEAN P 4/		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80
54 YR														
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS														
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL											
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	1-26	.04	1-26	.04	1-26	.08	1-26	.22	1-26	.39	1-26	.54	2-25	.76
													2-23	1.90
MAXIMUMS FOR PERIOD OF RECORD														
1936 to	6-28	.44	6-28	.43	6-28	.81	6-28	1.71	6-28	2.16	1-21	3.06	1-21	3.45
1962	1957		1957		1957		1957		1957		1959		1959	1-18
														1937
NOTES: Quality of records: Monthly P, fair; monthly Q, good; annual maximum discharges and volumes, good. Watershed conditions: 15% cropland, 55% grassland, 26% woodland, 4% miscellaneous; generally under improved practice. 1/ Arithmetic average of rain gages 27 and 91. 2/ All runoff data furnished by U. S. Geological Survey, Columbus, Ohio. 3/ P and Q records began Oct. 1936; part-year amounts for 1936 are included in averages. 4/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.														
GENERALLY REPRESENTS: (Revision) Allegheny-Cumberland Plateau problem area changed to Western Allegheny Plateau land resource area (N-124).														
GEOLOGY: Sedimentary rocks of the Pennsylvanian system, Conemaugh series, Allegheny series, and Pottsville series, occur beneath 24 in. to 80 in. of soil. Depth of alluvium in the major flood plain reaches a maximum depth of approximately 35 ft at weir 97. The depth of alluvium decreases with increasing distance toward the stream source. The Conemaugh series outcrops beneath the highest knobs and slopes in the watershed area and comprises less than 5% of the area. The upper 35% of the watershed is underlain by the silty shales and discontinuous sandstones of the Allegheny series. Thick coal horizons and underclay horizons mark the zones of seepage and spring development on the upper watershed slopes. The lower 60% of the area is comprised of the silty shales and clayey shales with thin limestones, coals, and clays of the Pottsville series. The major valley is incised in the thick massive Massillon sandstone. The watershed lies near the crest of the Cambridge Arch and lies predominantly on the southwestern flank of the Cambridge Arch. The rock strata dip downstream at an average of 1° to 1½°. The geologic structure of the watershed indicates a very gentle synclinal trend to the strata. Source of data: James B. Urban, Geologist, ARS. See geologic map on next page.														
NOTES: NO SELECTED RUNOFF EVENT REPORTED. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.37-5.														



MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		AREA—52.8 ACRES		WATERSHED 174		26.38				
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P 1/	2.83	3.37	3.10	1.15	2.46	1.69	2.28	1.82	5.61	2.21	2.96	2.09	31.57		
	Q	1.22	2.19	1.87	.69	.05	T	.01	.02	.07	.03	.49	.22	6.86		
STA AV2/	P	1.72	3.60	3.25	3.74	2.28	3.84	3.50	2.96	2.40	2.06	2.60	2.04	33.99		
	(60-62) Q	.66	1.82	2.09	2.51	.18	.63	.13	.14	.03	.01	.21	.14	8.55		
MEAN P 3/		3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80		
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.20	2-23	.17	2-23	.27	2-23	.40	2-23	.46	2-23	.49	2-26	.76	2-21	1.75
MAXIMUMS FOR PERIOD OF RECORD																
1961 to 1962	4-25 1961	1.03	4-25 1961	.82	4-25 1961	1.11	4-25 1961	1.33	4-25 1961	1.51	4-25 1961	1.63	4-25 1961	1.74	4-25 1961	2.78
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: 15% hardwoods, 2% reforested, 67% grassland, 16% miscellaneous; prevailing practice on 86% of area. 1/ Rain gage 107. 2/ P and Q records began May 1960. Part-year amounts for 1960 are included in averages. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GEOLOGY: Lies on eastern flank of Cambridge Arch with average dip of strata not exceeding 2°; no faults present. Strata comprised of thin beds of sandstone, shale, clay, coal, and limestone of the Allegheny and Pottsville series of the Pennsylvanian system. 5 clay formations which support perched water tables outcrop. The weir is bottomed in the Bedford clay formation (Pottsville series). The Allegheny series outcrops beneath the upper 88% of the watershed; the Pottsville series the lower 12% of the watershed. Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1960 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 174		26.38						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	RG 107			Event of June 13-14, 1960 4/												
				RG 107												
5-15	.00	NR	6-13	1522	.00	.00	6-13	1700	.0001	.000						
5-16	.08	NR		1532	.18	.08		1800	.0005	.001 T						
5-17	.12	NR		1600	.02	.09		1845	.0004	.001						
5-18	.00	NR		1828	.01	.10		1900	.0047	.001						
5-19	.00	5/ .001		1832	.45	.13		1920	.0466	.007						
5-20	T .002			1918	.03	.15		1956	.129	.062						
5-21	.00	.001		1923	.84	.22		2000	.177	.072						
5-22	.80	.024		1927	3.45	.45		2006	.199	.091						
5-23	.00	.006		1938	.22	.49		2010	.199	.104						
5-24	.00	.002		1945	.86	.59		2012	.184	.111						
5-25	.00	.001		1951	2.90	.88		2020	.149	.133						
5-26	.00	.001		2006	.80	1.08		2028	.129	.152						
5-27	.08	.001		2015	.20	1.11		2045	.0770	.181						
5-28	.07	.001		2023	.60	1.19		2115	.0466	.210						
5-29	.00	.001		2029	.00	1.19		2145	.0270	.228						
5-30	.15	.001		2038	.20	1.22		2330	.0116	.257						
5-31	.00	T		2042	.45	1.25		2350	.0466	.264						
6-1	.00	T		2048	.10	1.26		2400	.0770	.275						
6-2	.00	T		2057	.53	1.34										
6-3	.00	T		2240	.01	1.36	6-14	0031	.129	.328						
6-4	.00	T		2318	.03	1.38		0034	.242	.337						
6-5	.57	.001		2321	.80	1.42		0038	.438	.360						
6-6	.00	T		2357	.00	1.42		0043	.605	.404						
6-7	.00	T		2400	.60	1.45		0047	.702	.448						
6-8	.00	T						0054	.605	.524						
6-9	.00	T	6-14	0005	1.32	1.56		0102	.477	.597						
6-10	.00	T		0014	.33	1.61		0112	.334	.663						
6-11	1.10	.041		0020	.80	1.69		0120	.225	.700						
6-12	.15	.009		0027	1.03	1.81		0130	.155	.731						
6-13	6/.13	7/.002		0030	5.40	2.08		0135	.129	.743						
				0036	1.80	2.26		0140	.0605	.751						
				0045	.40	2.32		0230	.0319	.788						
				0049	.90	2.38		0500	.0130	.840						
				0200	.03	2.41		0900	.0074	.880						
				0530	.01	2.45		1730	8/.0024	.920						
Watershed conditions: Mixed cover under prevailing practice. 15% hardwoods, 2% reforested, 67% grassland, 16% miscellaneous.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 53.240. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 26.30-4. 4/ SUBSTITUTED FOR EVENT OF JUNE 28, 1940; WATERSHED NOT IN OPERATION IN 1940. 5/ BEGINNING OF RUNOFF RECORDS. 6/ RAIN ENDED 0730. 7/ RUNOFF PRIOR TO 1700. 8/ NORMAL BASE FLOW.																

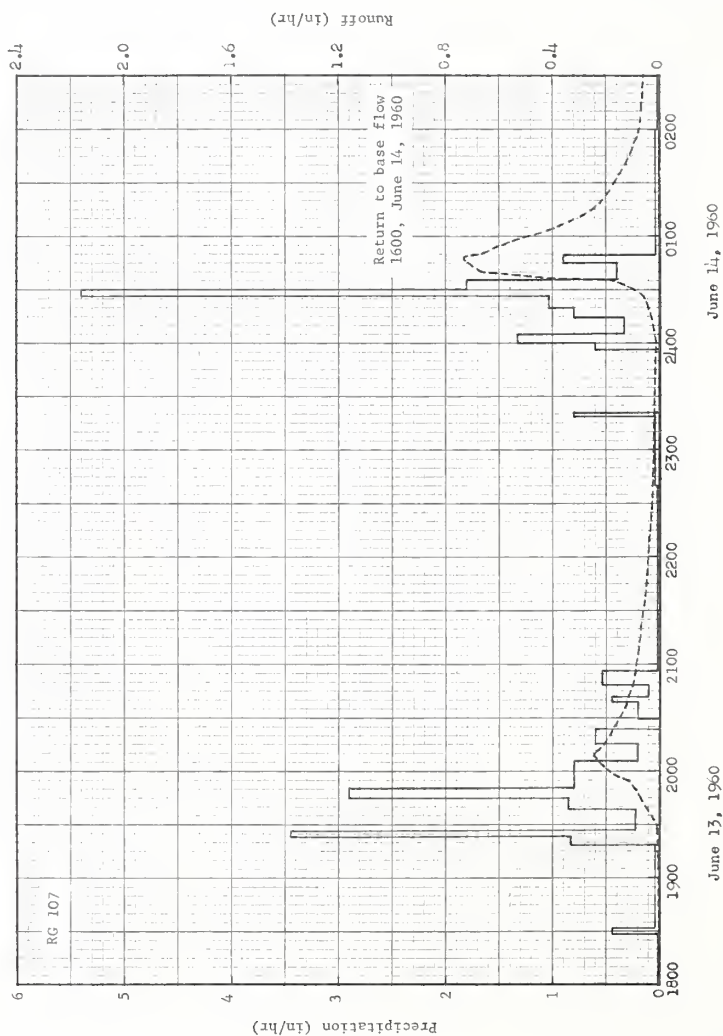


COSHOCTON, OHIO WATERSHED 174

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 194		26.39						
						AREA—187 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
YEAR																
1962 P1/	2.83	3.37	3.10	1.15	2.46	1.69	2.28	1.82	5.61	2.21	2.96	2.09	31.57			
Q	1.63	2.86	2.93	1.71	.58	.10	.08	.05	.18	.15	.70	.59	11.56			
STA AV2/ P	2.11	3.46	2.50	3.01	2.51	3.84	3.50	2.96	2.40	2.06	2.60	2.04	32.99			
(60-62) Q	1.46	2.09	2.74	2.69	.72	.84	.26	.17	.11	.11	.34	.37	11.90			
MEAN P 3/	3.30	2.62	3.45	3.72	3.84	4.39	4.22	3.78	3.15	2.61	2.87	2.85	40.80			
54 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.21	2-23	.17	2-23	.27	2-23	.47	2-23	.47	2-25	.58	2-25	.87	2-21	2.07
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1962	4-24 1961	.87	4-25 1961	.68	4-25 1961	.93	4-25 1961	1.29	4-25 1961	1.29	4-25 1961	1.49	4-25 1961	1.68	4-21 1961	3.00
NOTES: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: 21% hardwoods; 2% reforested, 58% grassland, 11% cultivated, 8% miscellaneous; prevailing practice. 1/ Rain gage 107. 2/ P and Q records began Jan. 1960. 3/ Mean P based on 54-yr (1909-62) U. S. Weather Bureau record period at Coshocton, Ohio.																
GEOLOGY: Lies on eastern flank of Cambridge Arch with average dip of strata not exceeding 20; no faults present. Strata comprised of sandstone, shale, clay, coal, and limestone of the Allegheny and Pottsville series of the Pennsylvanian system. Six clay formations which support perched water tables outcrop. The weir is bottomed in the Middle Mercer clay of the Pottsville series. The Allegheny series outcrops beneath the middle and upper slopes of the watershed, comprising 83% of the area; the Pottsville series outcrops exclusively in the lower slopes and creek beds (17% of the area). Source of data: James B. Urban, Geologist, ARS. See geologic map on p. 26.30-3.																
1960 SELECTED RUNOFF EVENT						COSHOCTON, OHIO		WATERSHED 194		26.39						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 13-14, 1960 4/																
RG 107																
5-15	.00	.020	6-13	1522	.00	.00	6-13	1530	.0004	.000						
5-16	.08	.017		1532	.18	.08		1600	.0008	.000						
5-17	.12	.018		1600	.02	.09		1700	.0008	.001						
5-18	.00	.015		1828	.01	.10		1900	.0006	.002						
5-19	.00	.012	6-14	1832	.45	.13	6-14	1930	.0114	.005						
5-20	.00	.011		1918	.03	.15		1945	.0721	.014						
5-21	.00	.010		1923	.84	.22		1955	.117	.028						
5-22	.80	.037		1927	3.45	.45		1958	.163	.035						
5-23	.00	.020		1938	.22	.49		2004	.220	.054						
5-24	.00	.012		1945	.86	.59		2008	.244	.070						
5-25	.00	.010		1951	2.90	.88		2014	.211	.092						
5-26	.00	.009		2006	.80	1.08		2026	.169	.130						
5-27	.08	.009	6-14	2015	.20	1.11		2036	.127	.155						
5-28	.07	.008		2023	.60	1.19		2050	.0970	.181						
5-29	.00	.008		2029	.00	1.19		2115	.0721	.215						
5-30	.15	.011		2038	.20	1.22		2145	.0455	.244						
5-31	.00	.007		2042	.45	1.25		2230	.0234	.268						
6-1	.00	.006		2048	.10	1.26		2400	.0144	.294						
6-2	.00	.005		2057	.53	1.34										
6-3	.00	.005	6-14	2240	.01	1.36		0025	.0546	.306						
6-4	.00	.005		2318	.03	1.38		0035	.176	.319						
6-5	.57	.013		2321	.80	1.42		0037	.460	.330						
6-6	.00	.006		2357	.00	1.42		0040	.668	.360						
6-7	.00	.005		2400	.60	1.45		0048	.732	.453						
6-8	.00	.004						0050	.668	.477						
6-9	.00	.004		0005	1.32	1.56		0058	.523	.557						
6-10	.00	.004		0014	.33	1.61		0104	.397	.604						
6-11	1.10	.037		0020	.80	1.69		0110	.307	.640						
6-12	.15	.014		0027	1.03	1.81		0118	.220	.674						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 188.56. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 26.30-4. 4/ SUBSTITUTED FOR EVENT OF JUNE 28, 1940; WATERSHED NOT IN OPERATION IN 1940.																

1960 SELECTED RUNOFF EVENT			COSHOCOTON, OHIO				WATERSHED 194				26.39
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 13-14, 1960—Continued											
6-13	1/ .13	2/.006	6-14	0030	5.40	2.08	6-14	0140	.125	.734	
				0036	1.80	2.26		0200	.0721	.767	
				0045	.40	2.32		0400	.0225	.845	
				0049	.90	2.38		1000	.0082	.923	
				0200	.03	2.41		1600	3/.0050	.959	
				0530	.01	2.45					
Watershed conditions: Mixed cover under prevailing practice. 21% in hardwoods, 2% reforested, 58% in grassland, 11% cultivated 8% miscellaneous.											

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 188.56. 1/ PRIOR TO 1522. 2/ RUNOFF PRIOR TO 1530. 3/ NORMAL BASE FLOW.



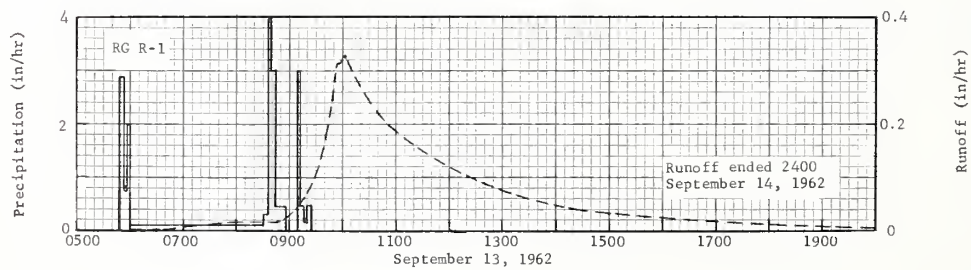
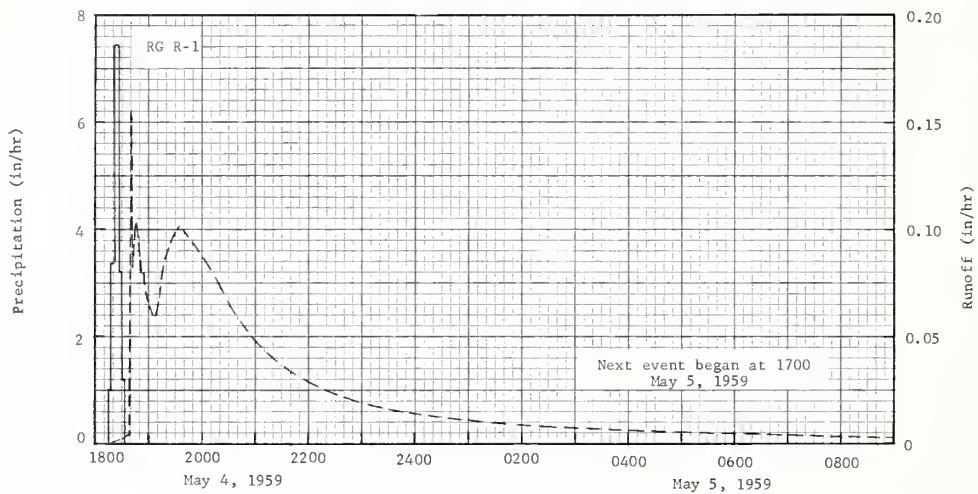
COSHOCOTON, OHIO WATERSHED 194

MONTHLY PRECIPITATION AND RUNOFF (inches)							COLBY, WISCONSIN WATERSHED W-1 AREA — 345 ACRES							29.01		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P 1/ Q 2/	.60 NR	1.80 NR	2.67 NR	1.31 NR	2.46 .28	2.22 .07	2.32 .02	8.17 .63	3.65 1.49	1.28 .01	.58 NR	.09 NR	27.15 4/ 2.50		
	STA AV 2/ P (50-62) Q	.91 NR	.90 NR	1.50 NR	2.24 NR	3.36 .68	4.00 .30	3.93 .22	4.06 .12	2.55 .20	1.87 .18	1.44 NR	.78 NR	27.54 4/ 1.70		
MEAN P 3/ 73 YR		1.06	1.14	1.75	2.58	4.00	4.92	3.43	3.73	3.79	2.55	1.72	1.22	31.89		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-13	.35	9-13	.29	9-13	.48	9-13	.82	9-13	.94	9-13	.99	9-13	1.01	9-10	1.46
MAXIMUMS FOR PERIOD OF RECORD																
1949 to 1962	6- 4 1958	.57	6- 4 1958	.45	6- 4 1958	.59	6- 4 1958	1.10	6- 4 1958	1.21	6- 4 1958	1.25	5- 9 1960	1.51	5- 4 1960	3.63
Notes: Quality of records: P and Q, good. Watershed conditions: 21.7% permanent pasture, 11.0% ungrazed woods, 2.8% roads and farmsteads, 64.5% 4-yr rotation of corn, small grain, hay, hay. 1/ Precipitation Apr. through Oct. is arithmetic average of 3 recording rain gages. Rest of year, only 1 standard rain gage. 2/ Precipitation and runoff records began May 1949. Runoff station not in operation during months showing NR. 3/ Mean P based on 73-yr (1890-1962) U. S. Weather Bureau record period at Neillsville, Wis. 4/ Totals for summer months of May through Oct. only.																
1959, 1962 SELECTED RUNOFF EVENTS							COLBY, WISCONSIN WATERSHED W-1							29.01		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of May 4-5, 1959																
	3 RG 5/			RG	R-1											
4-7	.10	.0067	5-4	1814	.00	.00	5-4	1814	.0000	.0000						
4-8	.00	.0146		1817	1.00	.05		1838	.0049	.0008						
4-9	.00	.0062		1822	3.36	.33		1841	.1550	.0041						
4-10	.28	.0042		1827	7.44	.95		1843	.0817	.0077						
4-11	.00	.0346		1830	3.20	1.11		1846	.1036	.0122						
4-12	.00	.0214		1832	1.20	1.15		1852	.0796	.0212						
4-13	.00	.0071						1854	.0792	.0238						
4-14	.00	.0036						1900	.0660	.0310						
4-15	.00	.0034						1905	.0594	.0361						
4-16	.28	.0041		OTHER	GAGE	TOTALS		1908	.0594	.0391						
4-17	1.00	.4409		RG	R-2	1.02		1912	.0698	.0434						
4-18	.00	.1095		RG	R-3	1.00		1918	.0872	.0512						
4-19	.00	.0153						1935	.1021	.0778						
4-20	.00	.0053	3 RG	AVG 5/	1.06			2000	.0872	.1176						
4-21	.00	.0026						2030	.0650	.1558						
4-22	.00	.0014						2100	.0482	.1838						
4-23	.00	.0009						2130	.0365	.2049						
4-24	.00	.0007						2200	.0287	.2209						
4-25	.00	.0006						2300	.0190	.2442						
4-26	.00	.0003						2400	.0140	.2604						
4-27	.00	.0001					5-5	0200	.0085	.2826						
								0400	.0058	.2969						
								1000	.0027	.3217						
								1700	.0014	.3351						
Watershed conditions: 21.7% permanent pasture, 11% ungrazed woods, 2.8% roads and farmsteads, 64.5% 4-year rotation of corn, small grain, hay, hay.																
Event of September 13-14, 1962																
				RG	R-1											
8-15	.89	.0000	9-13	0548	.00	.00	9-13	0602	.0000	.0000						
8-22	.54	.0000		0553	2.88	.24		0728	.0114	.0040						
8-23	1.12	.0110		0557	.75	.29		0806	.0171	.0133						
8-24	1.39	.0727		0600	2.00	.39		0850	.0179	.0253						
8-25	.00	.0047		0800	.10	.44		0908	.0409	.0336						
8-26	.00	.0003		0830	.10	.49		0922	.0802	.0479						
8-29	.93	.0037		0835	.30	.64		0946	.2068	.1002						
8-30	1.91	.1287		0838	4.00	.84		0954	.3121	.1349						
8-31	.43	.4111		0843	3.00	1.09		0958	.3151	.1558						
9-1	.00	.0197		0856	.46	1.19		1002	.3231	.1771						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 347.864. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 29.1-5. 5/ ARITHMETIC AVERAGE OF RAIN GAGES R-1, R-2, and R-3. 6/ BEGINNING OF NEXT RUNOFF EVENT.																

1962 SELECTED RUNOFF EVENT			COLBY, WISCONSIN				WATERSHED W-1			29.01
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
3 RG 1/			Event of September 13-14, 1962 - continued							
9-2	.00	.0013	9-13	0909	.00	1.19		1032	.2396	.3180
9-3	.10	.0001		0911	3.00	1.29		1106	.1778	.4348
9-4	.04	.0001		0916	.48	1.33		1204	.1173	.5760
9-8	.38	.0000		0920	.15	1.34		1304	.0730	.6700
9-9	.22	.0055		0925	.48	1.38		1352	.0500	.7185
9-10	.79	.1930		OTHER	GAGE	TOTALS		1500	.0306	.7630
9-11	.00	.0363		RG	R-2	1.60		1630	.0185	.7990
9-12	.00	.0033		RG	R-3	1.45		1910	.0081	.8319
				3 RG	AVG 1/	1.48		2400	.0027	.8551
							9-14	0430	.0011	.8629
								2400	.0000	.8691

Watershed conditions: 21.7% permanent pasture, 11% ungrazed woods, 2.8% roads and farmsteads, 64.5% 4-year rotation of corn, small grain, hay, hay.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 347.864. 1/ ARITHMETIC AVERAGE OF RAIN GAGES R-1, R-2, AND R-3.



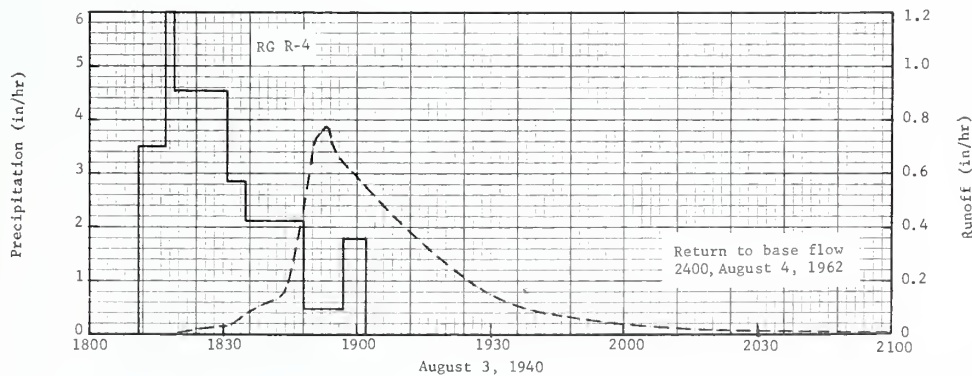
COLBY, WISCONSIN WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)							FENNIMORE, WISCONSIN WATERSHED W-1							31.01											
							AREA—330 ACRES																		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL											
1962	P ^{1/}	.44	1.61	2/3.48	2.35	5.44	2.62	7.22	3.74	3.84	3.01	.15	.56	34.46											
	Q	.85	.70	1.65	1.41	.99	.82	.95	.72	.73	.67	.50	.50	10.49											
STA AVG ^{3/}	P	.90	.97	1.86	3.06	3.83	5.04	4.13	3.93	3.65	2.39	2.07	1.09	32.92											
(38-62)	Q	.34	.45	.90	.29	.30	.49	.45	.39	.28	.25	.23	.22	4.59											
MEAN P ^{4/}		1.13	1.14	2.02	2.98	4.03	4.45	3.79	3.48	3.83	2.41	1.99	1.30	32.55											
72 YR																									
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																						
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS										
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME									
1962	9-16	.07	9-16	.05	9-16	.07	3-27	.12	3-27	.16	3-27	.25	3-26	.45	3-26	1.15E									
MAXIMUMS FOR PERIOD OF RECORD																									
1938 TO 1962	8-6 1951	1.69	8-16 1951	1.13	8-6 1951	1.53	7-15 1950	2.61	7-15 1950	2.69	7-15 1950	2.69	7-15 1950	2.69	7-15 1950	2.86									
NOTES: Quality of records: P and Q, excellent. Watershed conditions: 26% corn, 14% small grain, 18% hay, 26% pasture, 9% soil bank (idle), 7% roads and buildings. 1/ Precipitation is arithmetic average of 9 recording gages Apr. 13 to Dec. 1; average of R-1, R-6, R-8 rest of year. 2/ Snow water equivalent on Mar. 16 was 6.39 in., down to 0.56 in. on Mar. 30. 3/ Precipitation records began June 1938. Runoff records began July 1938. 4/ Mean P based on 72-yr (1891-1962) U. S. Weather Bureau record period at Lancaster, Wis.																									
1962 DAILY AIR TEMPERATURE (degrees F)										FENNIMORE, WISCONSIN WATERSHED W-1										31.01					
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	26	0	18	2	9	-26	34	20	65	49	56	47	82	59	80	58	79	49	66	53	44	24	59	35	
2	28	15	30	10	23	-4	35	16	69	41	58	47	76	62	61	52	61	49	61	52	40	28	58	44	
3	40	26	44	28	26	5	41	19	77	47	60	43	73	64	62	58	62	51	64	53	42	31	56	41	
4	34	30	44	19	28	15	41	34	60	53	76	53	78	61	83	60	62	43	58	54	34	30	48	32	
5	32	20	19	-7	24	11	46	33	78	55	82	53	82	63	68	59	63	41	63	48	40	26	32	17	
6	20	16	1	-12	28	9	61	32	60	41	66	57	91	63	86	60	65	37	62	46	45	29	24	15	
7	16	13	20	-3	41	26	55	32	47	39	80	52	91	65	86	65	73	43	63	56	40	33	30	13	
8	15	-5	19	-1	33	28	48	30	56	41	77	50	74	57	80	61	66	55	60	50	36	22	22	11	
9	-5	-13	19	2	37	30	40	26	54	38	78	64	79	52	78	52	65	60	70	51	41	19	15	4	
10	-1	-12	22	0	38	32	52	23	46	41	81	58	82	58	61	46	60	47	84	53	46	24	10	4	
11	12	-10	36	20	35	31	52	30	61	44	76	55	85	64	77	54	76	-42	76	66	45	28	6	-10	
12	26	12	37	27	35	28	36	20	68	52	71	44	83	57	72	60	86	63	70	45	36	28	15	0	
13	29	23	32	26	33	23	35	24	82	64	77	43	66	54	74	53	84	58	77	45	55	26	24	3	
14	29	14	33	23	27	20	35	21	82	64	79	46	69	58	78	47	79	50	79	64	56	30	25	5	
15	14	2	32	21	28	20	43	22	83	66	79	48	65	55	78	51	80	57	80	58	42	34	30	24	
16	9	-3	32	21	37	20	49	22	86	64	83	61	71	58	77	54	72	51	58	40	42	32	35	26	
17	-1	-11	29	17	38	18	60	34	83	62	87	62	80	54	74	49	64	47	64	38	32	27	52	30	
18	2	-14	24	18	39	13	56	35	86	65	76	55	82	57	82	48	71	42	66	42	31	26	46	30	
19	2	-6	22	10	37	25	53	29	84	63	74	55	74	56	84	56	55	35	67	47	34	28	42	23	
20	6	-14	24	3	38	25	57	24	72	50	77	58	82	63	79	63	59	30	56	36	49	34	29	21	
21	16	3	24	16	38	26	74	42	70	48	78	56	79	60	90	62	57	36	60	35	47	29	26	16	
22	6	-4	19	4	44	23	63	41	87	54	77	60	80	56	86	57	54	43	54	36	34	20	34	12	
23	20	-1	23	4	45	24	61	35	61	56	85	61	74	58	91	68	68	38	42	26	46	26	12	-2	
24	27	10	24	6	45	24	82	40	68	51	82	58	83	58	69	62	66	52	43	24	38	20	14	-5	
25	38	23	34	24	46	30	80	54	68	46	82	58	67	47	73	54	62	42	31	18	46	21	18	-6	
26	37	16	26	4	48	25	83	58	62	47	82	56	71	47	78	50	66	42	42	19	49	28	5	-18	
27	17	1	17	-1	56	22	78	56	63	45	86	50	71	50	85	59	56	40	63	30	46	25	22	5	
28	22	6	2	-16	66	35	59	40	75	52	86	61	62	53	86	62	60	36	54	40	51	23	34	8	
29	36	13	---	---	35	30	61	38	78	63	86	62	77	51	89	64	66	36	50	29	61	36	32	4	
30	32	-7	---	---	33	24	64	52	77	61	84	62	73	50	80	64	57	46	54	41	60	30	12	3	
31	13	-6	---	---	38	19	---	---	68	51	---	---	77	49	76	54	---	---	41	25	---	---	---	17	1
AV.	19	4	25	9	36	20	55	33	71	52	77	54	76	56	80	56	67	45	60	42	43	27	29	12	
MEAN	11.9		16.7		28.4		43.8		61.3		66.1		66.8		67.8		56.6		51.6		35.5		20.9		
STA AV	24	9	28	12	37	21	55	34	66	46	76	56	80	59	79	58	71	49	61	40	41	25	28	14	
NOTES: TEMPERATURE DATA FROM HYGROTHERMOGRAPH CHARTS CHECKED WEEKLY WITH MAXIMUM-MINIMUM THERMOMETERS. STA AV IS A 23-YR AVERAGE (1940-62).																									

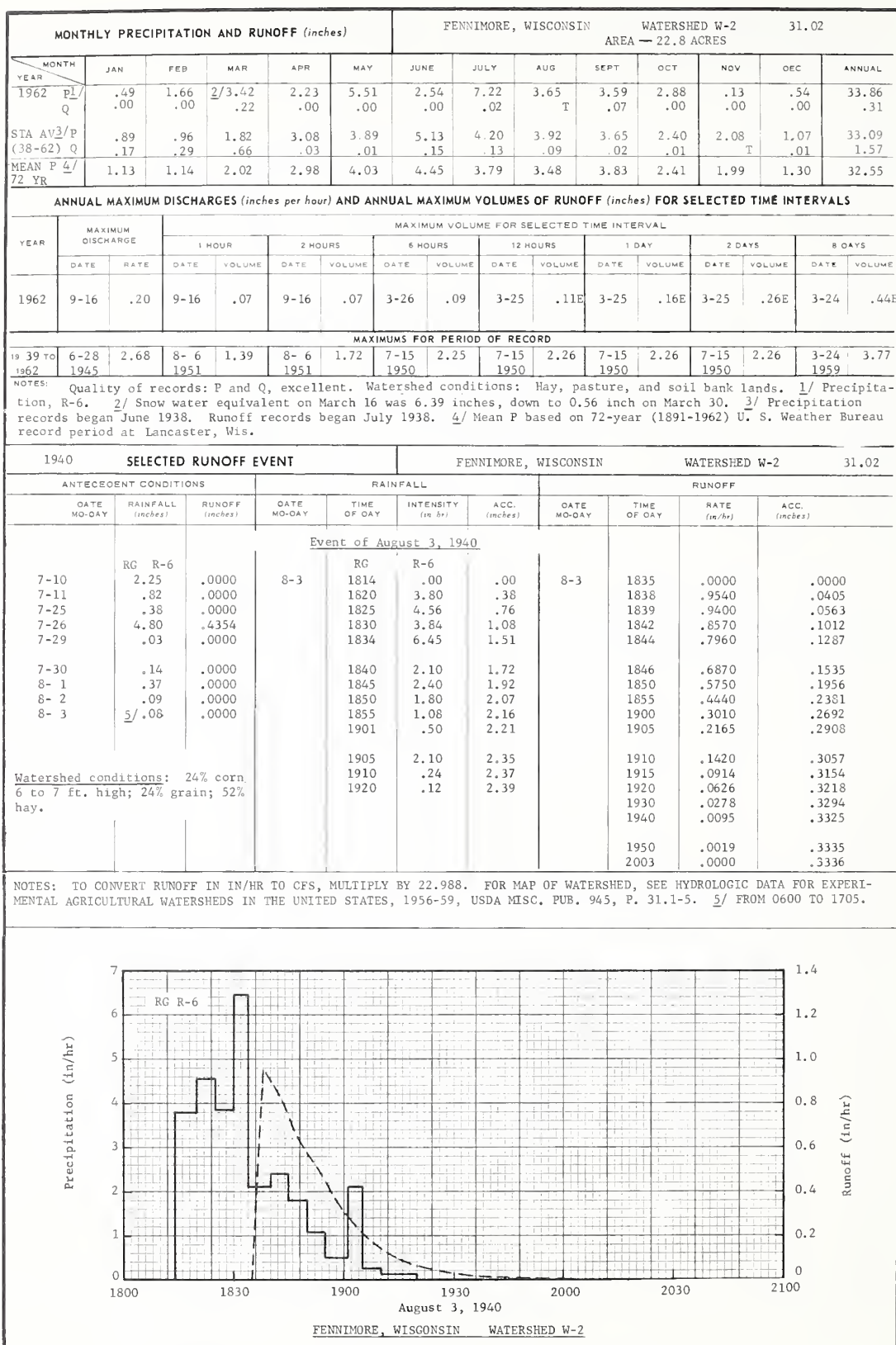
1962 DAILY PRECIPITATION (inches)						FENNIMORE, WISCONSIN WATERSHED W-1 31.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.01	.00	.13 S	.25	.00	.07	.00	.00	.00	.00	.00
2	.00	.01	.00	.00	.00	.00	3.60	.00	.00	.05	.00	.00
3	.00	.00	.74	.00	.00	.26	.00	.58	.00	1.18	.00	.00
4	.30	.00	1.07	.23	.00	.15	.00	.00	.18	.91	.12	.30
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00
7	.03	.00	.00	.00	.41	.00	.00	.00	.00	.46	.00	.00
8	.00	.00	.26	.17	.00	.00	.29	.00	.67	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.31	.28	.00	.00
10	.00	.00	.04	.00	.20	1.63	.00	.00	.11	.00	.00	.00
11	.00	.00	.00	.00	.39	.15	.13	.00	.00	.00	.00	.00
12	.03	.00	.00	.31	1.17	.00	.03	.00	.00	.00	.00	.00
13	.00	.01	.00	.03 S	.00	.00	.05	.00	.14	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.63	.00	.00	.00	.00	.00
15	.00	.04	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00
16	.00	.00	.00	.05	.00	.00	.00	.00	1.76	.00	.00	.00
17	.00	.13	.00	.00	.00	.29	.00	.00	.00	.00	.00	.00
18	.00	.38	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
19	.00	.02	.00	.00	.00	.00	1.02	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.47	.47	.00	.03	.03	.00
21	.00	.24	.00	.18	.00	.00	.00	.00	.26	.00	.00	.00
22	.00	.02	.00	.00	.06	.10	.17	.00	.00	.00	.00	.07S
23	.00	.04	.00	.00	.16	.00	.00	1.58	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.31	.91	.04	.00	.00	.02S
25	.00	.33	.00	.00	.26	.00	.00	.00	.00	.00	.00	.17S
26	.00	.15	.00	.00	.07	.00	.00	.00	.06	.00	.00	.00
27	.00	.17	.00	1.19	.00	.00	.14	.00	.00	.00	.00	.00
28	.00	.06	.00	.00	.43	.00	.31	.00	.00	.00	.00	.00
29	.00	-----	.38	.02	1.85	.00	.00	.13	.00	.00	.00	.00
30	.00	-----	.00	.00	.19	.00	.00	.07	.31	.00	.00	.00
31	.00	-----	.11	-----	.00	-----	.00	.00	-----	.00	-----	.00
TOTAL	.44	1.61	3.46	2.35	5.44	2.62	7.22	3.74	3.74	3.01	.15	.56
STAAV	.90	.97	1.86	3.06	3.83	5.04	4.17	3.69	3.36	2.44	2.04	1.10
NOTES: PRECIPITATION VALUES ARE THE ARITHMETIC AVERAGE OF 9 RECORDING GAGES FROM APR. 13 TO DEC. 1. REST OF YEAR FROM 3 GAGES, R-1, R-6, AND R-8. ALL PRECIPITATION IN JAN., FEB., AND MAR. IS SNOW.												
1962 MEAN DAILY DISCHARGE (cfs)						FENNIMORE, WISCONSIN WATERSHED W-1 31.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.466	.310	.310	.891	.404	.383	.310	.310	.279	.263	.247	.218
2	.466	.310	.294	.829	.445	.383	1.755	.310	.279	.247	.247	.218
3	.466	.310	.279	.798	.424	.395	.445	.430	.279	.566	.247	.218
4	.466	.367	.279	.905	.424	.399	.403	.384	.292	.547	.266	.218
5	.466	.424	.279	.842	.424	.385	.362	.365	.279	.351	.247	.233
6	.466	.424	.279	.798	.424	.424	.365	.328	.279	.326	.247	.263
7	.445	.403	.279	.768	.480	.403	.347	.310	.279	.395	.247	.279
8	.424	.383	.279	.737	.400	.383	.414	.310	.353	.328	.247	.263
9	.424	.364	.279	.707	.365	.383	.353	.310	.301	.362	.247	.233
10	.424	.347	.279	.644	.427	.891	.363	.310	.338	.310	.247	.218
11	.403	.347	.373	.586	.453	.536	.383	.310	.279	.294	.247	.218
12	.383	.347	.466	1.523	.845	.383	.383	.294	.279	.279	.233	.218
13	.383	.347	.386	.614	.445	.365	.383	.279	.283	.279	.218	.218
14	.365	.347	.310	.614	.424	.347	.482	.279	.279	.279	.218	.218
15	.347	.347	.310	.614	.424	.347	.383	.279	.263	.260	.218	.218
16	.347	.347	.328	.586	.403	.347	.365	.279	1.536	.283	.218	.218
17	.347	.347	.385	.559	.383	.376	.347	.279	.337	.279	.218	.218
18	.347	.347	.468	.535	.383	.265	.347	.279	.310	.279	.218	.218
19	.347	.347	.563	.511	.383	.347	.442	.279	.310	.279	.233	.218
20	.347	.347	.614	.511	.383	.347	.595	.337	.310	.279	.233	.218
21	.347	.347	.614	.545	.365	.347	.403	.279	.316	.279	.218	.218
22	.347	.347	.614	.489	.347	.347	.383	.279	.310	.263	.218	.218
23	.347	.328	.614	.466	.365	.347	.365	.568	.310	.247	.218	.218
24	.347	.310	.922	.466	.382	.328	.352	.567	.294	.247	.218	.218
25	.347	.310	1.385	.466	.376	.310	.373	.324	.279	.247	.218	.218
26	.328	.310	2.922	.466	.380	.310	.310	.310	.279	.247	.233	.218
27	.310	.310	3.015	.676	.347	.310	.313	.293	.279	.247	.233	.218
28	.310	.310	2.457	.528	.380	.310	.406	.279	.279	.247	.218	.218
29	.310	-----	1.204	.466	1.105	.310	.347	.279	.279	.247	.218	.218
30	.310	-----	1.078	.445	.396	.310	.347	.279	.279	.247	.218	.218
31	.310	-----	.967	-----	.403	-----	.328	.279	-----	.247	-----	.218
MEAN	.379	.346	.737	.653	.441	.377	.427	.322	.335	.299	.232	.224
INCHES	.847	.999	1.648	1.413	.966	.816	.955	.720	.725	.669	.502	.501
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .07213. RECORDS ARE EXCELLENT. SOME PERIODS IN WINTER PARTIALLY ESTIMATED BECAUSE OF ICE IN STILLING WELL.												

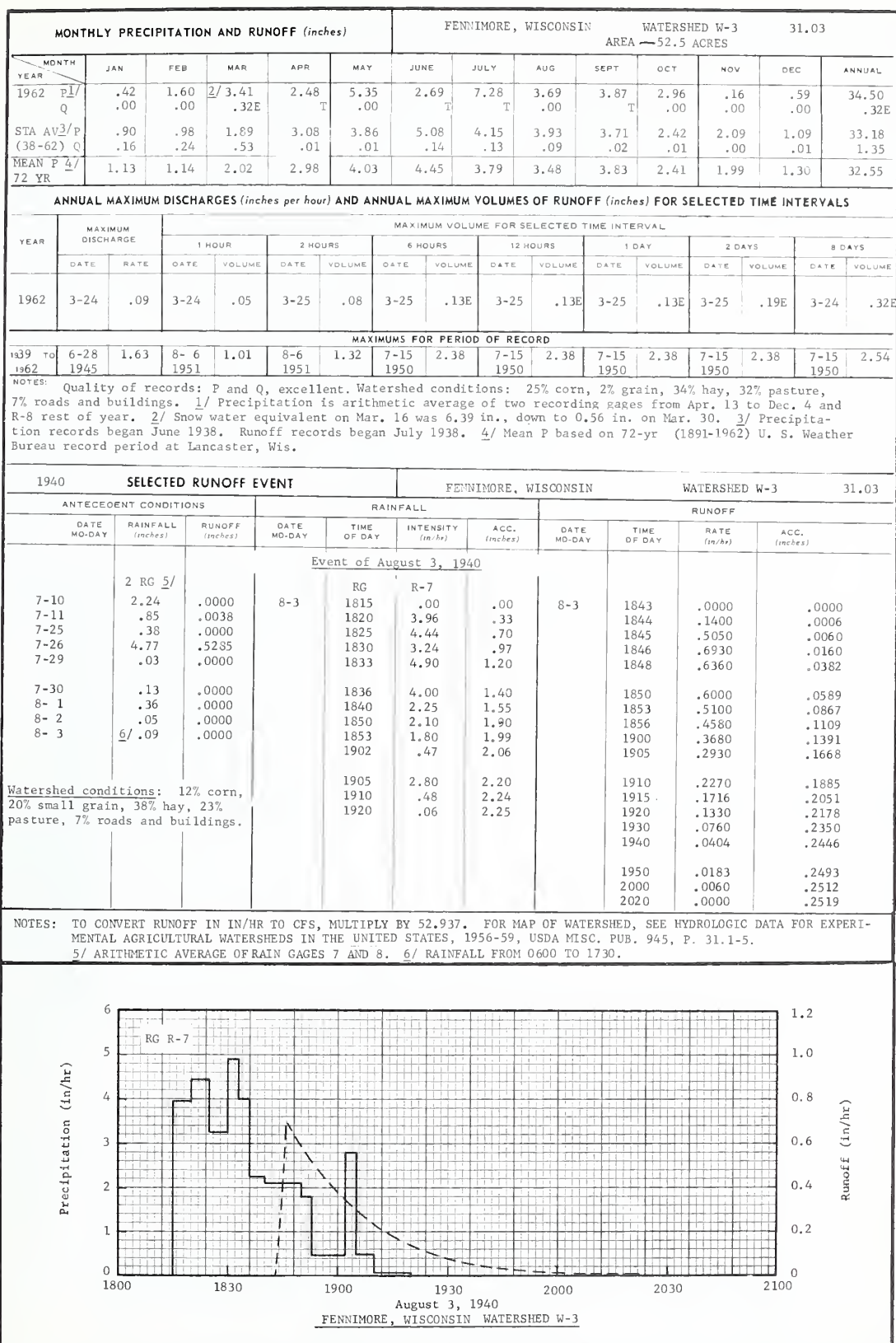
1940 SELECTED RUNOFF EVENT			FENNIMORE, WISCONSIN			WATERSHED W-1			31.01
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
			Event of August 3-4, 1940						
	9 RG 1/			RG	R-4				
7-10	2.05	.0175	8-3	1811	.00	.00	8-3	1815	.0001
7-11	.84	.0290		1817	3.50	.35		1820	.0055
7-12	.00	.0024		1819	6.00	.55		1832	.0406
7-13-15	.00	.0060		1831	4.55	1.46		1839	.1168
7-16-24	.00	.0041		1835	2.85	1.65		1842	.1268
7-25	.38	.0016		1846	2.12	2.11		1844	.1642
7-26	4.76	.8272		1857	.47	2.18		1848	.4770
7-27	.00	.0033		1902	1.80	2.33		1850	.6900
7-28	.00	.0027						1851	.7350
7-29	.03	.0027		OTHER	GAGE	TOTALS		1853	.7740
7-30	.13	.0027		RG	R-1	2.30		1855	.6870
7-31	.00	.0027		RG	R-2	2.29		1900	.5880
8-1	.34	.0036		RG	R-3	2.35		1906	.4760
8-2	.04	.0024		RG	R-5	2.21		1915	.3360
8-3	2/ .09	3/ .0018		RG	R-6	2.39		1924	.2110
				RG	R-7	2.25		1927	.1780
				RG	R-8	2.30		1933	.1240
				RG	R-9	2.08		1939	.0911
				9 RG	AVG 1/	2.28		1945	.0690
								2000	.0372
								2020	.0187
								2100	.0056
								2400	.0004
							8-4	1200	.0002
								2400	4/ .0001

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 332.750. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 31.1-5. 1/ ARITHMETIC AVERAGE OF RAIN GAGES 1 THROUGH 9. 2/ RAINFALL FROM 0600 TO 1710. 3/ RUNOFF TO 1815. 4/ NORMAL BASE FLOW.

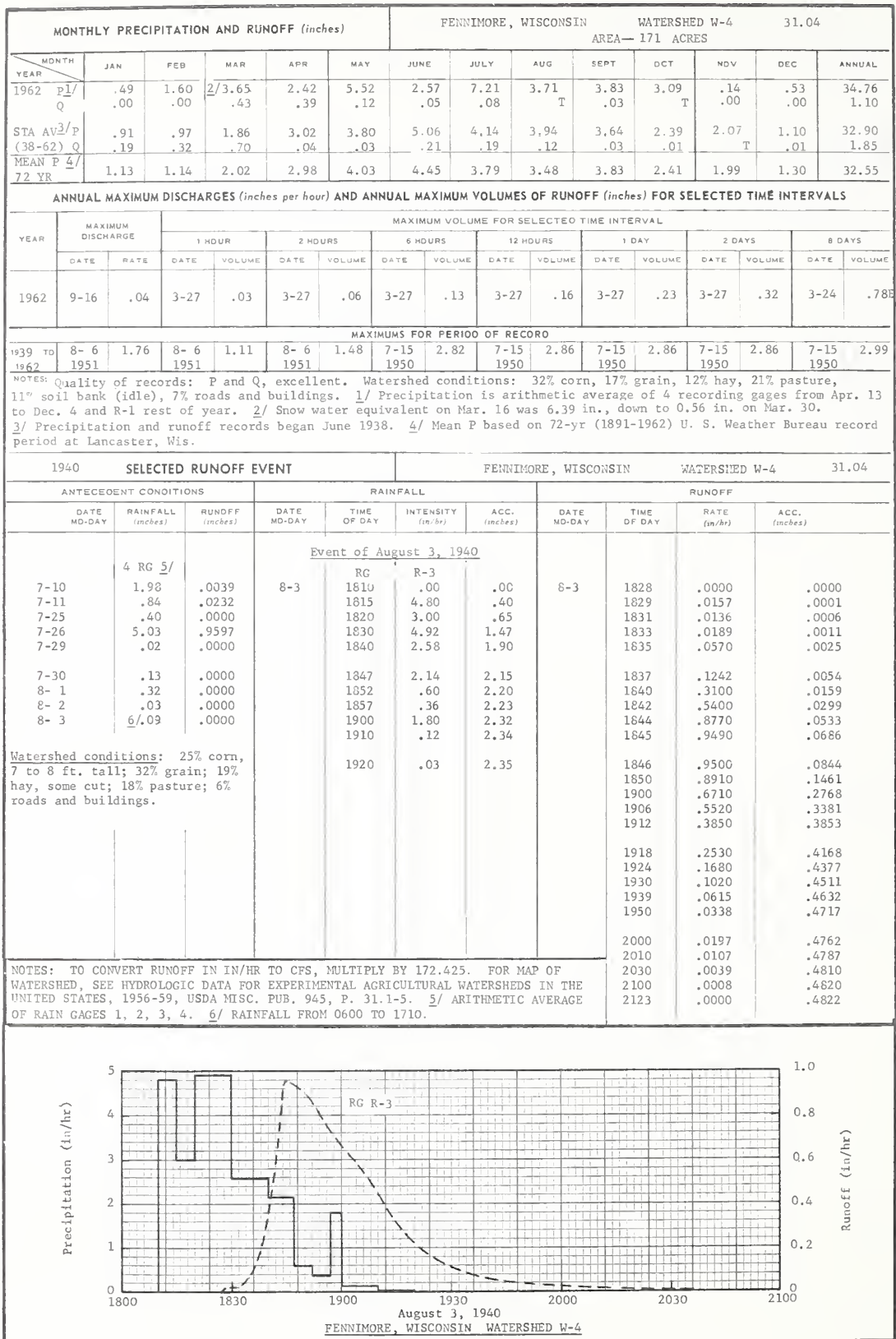


FENNIMORE, WISCONSIN WATERSHED W-1





Cooperative Research Project of USDA and Wisconsin Agricultural Experiment Station



MONTHLY PRECIPITATION AND RUNOFF (inches)						LACROSSE, WISCONSIN WATERSHED CW AREA—2.71 ACRES								32.03		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 1/ Q	.15 .00	1.43 .00	1.12 .98	1.38 .00	4.57 .00	3.39 .00	3.09 .00	7.48 .87	2.72 .00	2.05 .00	.11 .00	.34 .00	27.83 1.05			
STA AV2/ P (37-62) Q	.93 .10	1.01 .21	1.94 .74	2.85 .14	3.89 .08	4.36 .20	3.95 .29	3.95 .15	3.40 .13	2.14 .03	1.76 .01	.90 .01	31.00 2.12			
MEAN P 3/ 72 YR	1.16	1.17	1.85	2.91	3.95	4.37	3.62	3.47	3.58	2.32	1.96	1.28	31.92			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-30	.09	3-24	.08	3-24	.14	3-24	.36	3-24	.53	3-24	.60	3-24	.85	3-24	.90
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1962	7-21 1938	4.50	7-19 1952	1.77	7-19 1952	2.01	7-19 1952	2.08	7-19 1952	2.11	7-19 1952	2.12	7-19 1952	2.12	3-23 1961	2.25
NOTES: Quality of records: P and Q, good. Watershed conditions: 100% hay. 1/ Precipitation obtained from control plot rain gage. All precipitation in Jan., Feb., Mar., Nov., and Dec. is snow. 2/ Precipitation and runoff records began Jan. 1937. 3/ Mean P based on 72-yr (1891-1962) U. S. Weather Bureau record period at Hillsboro, Wis.																
NO SELECTED RUNOFF EVENT REPORTED. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 32.3-6.																

Cooperative Research Project of USDA and Wisconsin Agricultural Experiment Station

32.3-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						LaCROSSE, WISCONSIN WATERSHED CWA AREA—2.95 ACRES 1/								32.04		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962 P 2/ Q		.15 .00	1.43 .00	1.12 .33	1.38 .00	4.57 .00	3.39 .00	3.09 .00	7.48 .07	2.72 .05	2.05 .00	.11 .00	.34 .00	27.83 .45		
STA AV3/P (52-62) Q		.60 .01	.89 .00	1.60 .50	2.59 .33	3.35 .00	4.13 .20	4.70 .46	4.13 .16	3.13 .03	1.99 .01	1.76 .00	.74 .00	30.11 1.70		
MEAN P 4/ 72 YR		1.16	1.17	1.85	2.91	3.95	4.37	3.62	3.47	3.88	2.32	1.96	1.26	31.92		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-30	.11	3-27	.05	3-27	.08	3-27	.14	3-27	.14	3-27	.24	3-26	.32	3-25	.33
MAXIMUMS FOR PERIOD OF RECORD																
1952 TO 1962	7-19 1952	3.40	7-19 1952	1.73	7-19 1952	1.98	7-19 1952	2.06	7-19 1952	2.14	7-19 1952	2.16	7-19 1952	2.16	7-19 1952	2.16
Notes: Quality of records: P and Q, good. Watershed conditions: 100% hay. 1/ This area was erroneously reported as 3.06 ac. on p. 225 of Misc. Pub. 994 for 1960-61. 2/ Precipitation obtained from control plot rain gage. All precipitation in Jan., Feb., Mar., Nov., and Dec. is snow. 3/ Precipitation and runoff records began Jan. 1952. 4/ Mean P based on 72-yr (1891-1962) U. S. Weather Bureau record period at Hillsboro, Wis.																
NO SELECTED RUNOFF EVENT REPORTED. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 32.3-6.																

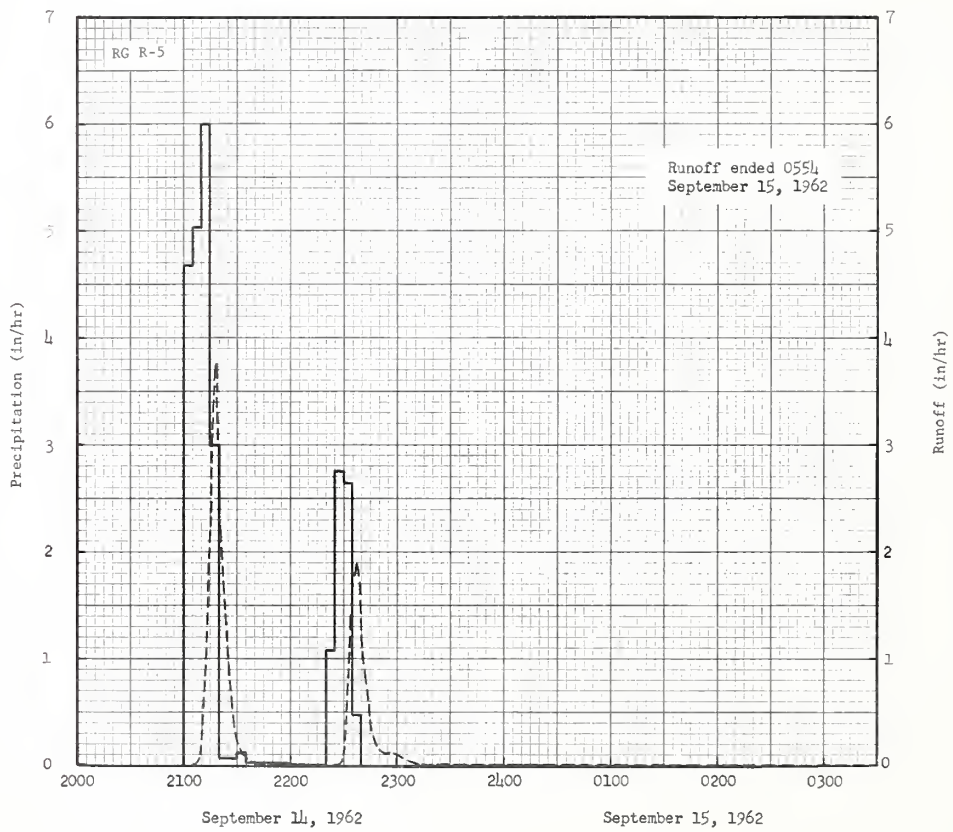
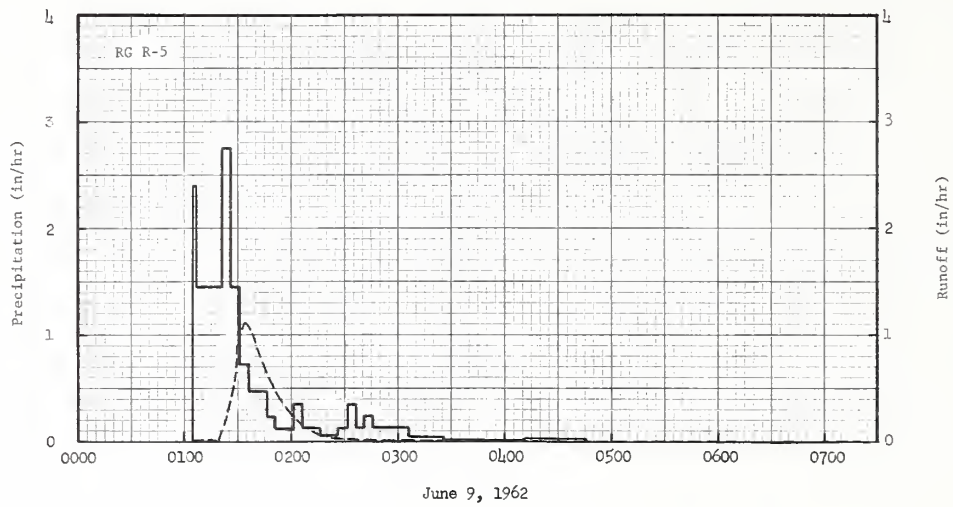
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(See 32.3-1 above)
32.4-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								CHEROKEE, OKLAHOMA WATERSHED W-10 AREA — 1.66 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.33 .00	.10 .00	.25 .00	2.32 .06	1.82 .20	5.47 .54	4.58 .23	.34 .00	3.24 .94	.98 .00	.99 .00	.73 .00	21.15 1.97			
STA AV 2/ P (60-62) Q	.20 .00	.17 .00	2.21 .25	1.83 .06	3.52 .98	5.27 .95	3.10 .12	1.88 T	2.90 .32	2.14 .09	1.15 .03	.99 .02	25.36 2.82			
MEAN P 3/ 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								CHEROKEE, OKLAHOMA WATERSHED W-10								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	3.77	9-14	.57	9-14	.92	9-14	.94	9-14	.94	9-14	.94	9-14	.94	9-14	.94
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	9-14 1962	3.77	6-2 1961	1.01	6-2 1961	1.02	6-2 1961	1.02	6-2 1961	1.02	6-2 1961	1.02	6-2 1961	1.02	5-4 1961	1.14
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-5. 2/ Precipitation and runoff records began Aug. 1960. 3/ Mean P based on 48-yr. (1915-62) U. S. Weather Bureau record period at Cherokee, Okla., with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS								CHEROKEE, OKLAHOMA WATERSHED W-10								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-20-62	RG R-5 1.62	.20	6-9-62	RG R-5		6-9-62										
5-28	.20	.00	0105	.00	.00	0105	.0000	.00								
6-1	1.04	.06	0106	2.40	.04	0116	.0084	T								
6-2	.92	T	0111	1.44	.16	0119	.0043	T								
6-3	.06	.00	0116	1.44	.28	0121	.0990	T								
6-5	.32	.00	0121	1.44	.40	0124	.226	.01								
6-7	.22	.00	0126	2.76	.63	0125	.285	.02								
6-8	.52	.00	0131	1.44	.75	0127	.425	.03								
			0136	.72	.81	0128	.524	.03								
			0141	.48	.85	0129	.655	.04								
Watershed conditions: 100% of area in wheat 26 to 30 inches high; soil moist throughout the profile.			0146	.48	.89	0130	.804	.06								
			0151	.24	.91	0133	1.07	.10								
			0201	.12	.93	0134	1.13	.12								
			0206	.36	.96	0137	1.07	.18								
			0216	.12	.98	0142	.873	.26								
			0226	.06	.99	0145	.717	.30								
			0231	.12	1.00	0148	.578	.33								
			0236	.36	1.03	0151	.473	.36								
			0241	.12	1.04	0155	.380	.38								
			0246	.24	1.06	0158	.310	.40								
			0306	.12	1.10	0201	.249	.42								
			0326	.03	1.11	0203	.204	.42								
			0411	.01	1.12	0207	.138	.44								
			0446	.02	1.13	0210	.114	.44								
						0216	.0725	.45								
						0220	.0501	.46								
						0230	.0169	.46								
						0251	.0062	.46								
						0311	.0043	.47								
						0721	.0000	.47								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.10-4.																

1962 SELECTED RUNOFF EVENTS						CHEROKEE, OKLAHOMA WATERSHED W-10		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of September 14-15, 1962								
8-24-62	RG R-5 .05	.00	9-14-62	RG R-5		9-14-62		
9-2	.10	.00	2100	.00	.00	2100	.0000	.00
9-7	.08	.00	2105	4.68	.39	2106	.0138	T
9-9	.05	.00	2110	5.04	.81	2108	.0665	T
			2115	6.00	1.31	2109	.122	T
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2120	3.00	1.56	2110	.260	.01
			2130	.06	1.57	2111	.524	.01
			2135	.12	1.58	2112	.850	.02
			2200	.02	1.59	2113	1.27	.04
			2220	.00	1.59	2114	1.89	.07
			2225	1.08	1.68	2115	2.16	.10
			2230	2.76	1.91	2116	2.49	.14
			2235	2.64	2.13	2117	3.24	.19
			2240	.48	2.17	2118	3.77	.25
						2119	3.24	.31
						2120	2.67	.35
						2121	2.28	.40
						2122	2.00	.43
						2124	1.33	.49
						2125	1.05	.51
						2126	.850	.52
						2127	.636	.54
						2128	.473	.54
						2129	.310	.55
						2130	.249	.56
						2132	.156	.56
						2134	.106	.57
						2136	.0725	.57
						2140	.0278	.57
						2144	.0062	.57
						2203	.0000	.57
						2224	.0000	.57
						2228	.0138	.57
						2229	.0725	.58
						2230	.194	.58
						2231	.524	.58
						2232	.827	.59
						2233	1.07	.61
						2234	1.51	.63
						2236	1.78	.69
						2237	1.89	.72
						2239	1.71	.78
						2240	1.33	.80
						2241	1.07	.82
						2242	.897	.84
						2243	.738	.85
						2244	.560	.86
						2245	.425	.87
						2246	.351	.88
						2248	.272	.89
						2250	.165	.90
						2252	.122	.90
						2257	.106	.91
						2300	.0919	.91
						2306	.0360	.92
						2310	.0169	.92
						2314	.0138	.92
						2344	.0062	.93
						2400	.0043	.93
						9-15-62		
						0554	.0000	.94

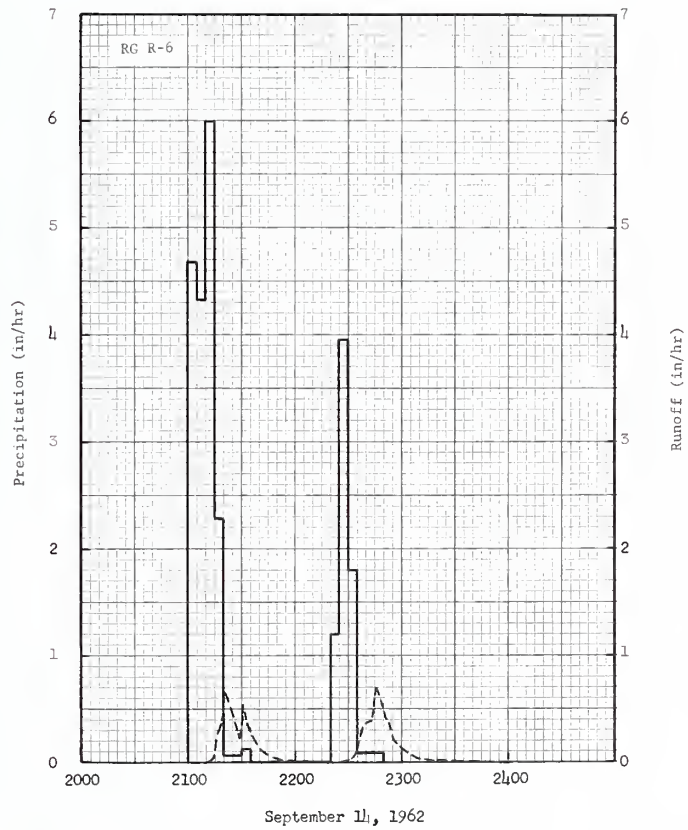
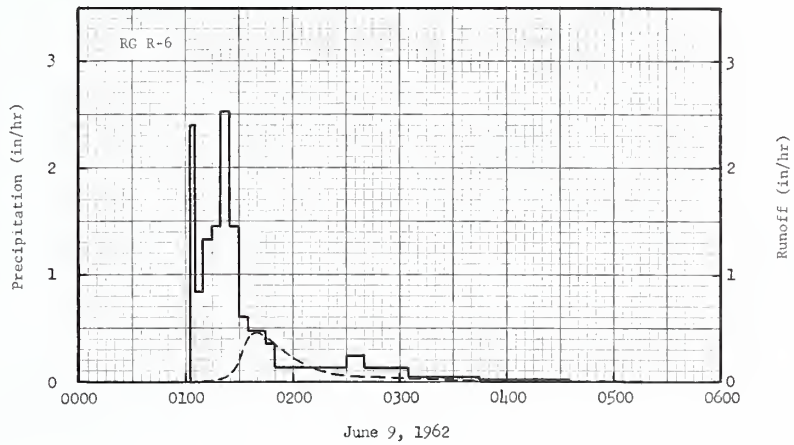
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940.



CHEROKEE, OKLAHOMA WATERSHED W-10

MONTHLY PRECIPITATION AND RUNOFF (Inches)								CHEROKEE, OKLAHOMA WATERSHED W-11 AREA — 2.12 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.35 .00	.10 .00	.26 .00	2.38 .04	1.80 .01	5.33 .30	4.37 .01	.34 .00	3.17 .36	.96 .00	.98 .00	.74 .00	20.78 .72			
STA AV 2/ P (60-62) Q	.21 .00	.22 .00	2.23 .23	1.89 .07	3.50 .60	5.20 .75	3.01 T	1.60 .03	2.89 .12	2.08 .02	1.15 T	1.00 .01	24.98 1.83			
MEAN P 3/ 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								CHEROKEE, OKLAHOMA WATERSHED W-11								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	.70	6-9	.24	9-14	.35	9-14	.36	9-14	.36	9-14	.36	9-14	.36	9-14	.36
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	6-2 1961	2.03	6-2 1961	.92	6-2 1961	.94	6-2 1961	.95	6-2 1961	.95	6-2 1961	.95	6-2 1961	.95	6-2 1961	.95
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-6. 2/ Precipitation and runoff records began Aug. 1960. 3/ Mean P based on 48-yr. (1915-62) U. S. Weather Bureau record period at Cherokee, Okla., with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS								CHEROKEE, OKLAHOMA WATERSHED W-11								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-20-62	RG R-6 1.60	.01	6-9-62	RG R-6		6-9-62										
5-28	.20	.00	0103	.00	.00	0110	.0000	.00								
6-1	1.01	T	0105	2.40	.08	0113	.0097	T								
6-2	.96	.00	0110	.84	.15	0121	.0311	T								
6-3	.04	.00	0115	1.32	.26	0123	.0551	T								
6-5	.30	.00	0120	1.44	.38	0127	.113	.01								
6-7	.21	.00	0125	2.52	.59	0130	.2009	.02								
6-8	.52	.00	0130	1.44	.71	0132	.302	.02								
			0135	.60	.76	0137	.439	.05								
			0145	.48	.84	0139	.470	.07								
			0150	.36	.87	0143	.439	.10								
			0230	.12	.95	0150	.367	.15								
			0240	.24	.99	0154	.302	.17								
			0305	.12	1.04	0158	.243	.19								
			0345	.02	1.05	0202	.2009	.20								
			0435	.01	1.06	0207	.163	.22								
						0210	.137	.22								
						0214	.113	.23								
						0218	.0918	.24								
						0223	.0725	.25								
						0228	.0606	.25								
						0235	.0498	.26								
						0245	.0399	.27								
						0253	.0311	.27								
						0310	.0231	.28								
						0326	.0158	.28								
						0343	.0097	.29								
						0357	.0050	.29								
						0516	.0000	.29								
Watershed conditions: 100% of area in wheat 26 to 30 inches high; soil moist throughout the profile.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1377. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.11-4.																

1962 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA WATERSHED W-11					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of September 14, 1962								
8-24-62	RG R-6 .05	.00	9-14-62	RG R-6		9-14-62		
9-2	.10	.00	2100	.00	.00	2102	.0000	.00
9-7	.10	.00	2105	4.68	.39	2113	.0231	T
9-9	.05	.00	2110	4.32	.75	2114	.0498	T
			2115	6.00	1.25	2115	.129	T
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2120	2.28	1.44	2116	.243	.01
			2130	.06	1.45	2118	.367	.02
			2135	.12	1.46	2119	.486	.02
			ceased			2120	.586	.03
			2220	.00	1.46	2121	.659	.04
			2225	1.20	1.56	2123	.552	.05
			2230	3.96	1.89	2125	.454	.08
			2235	1.80	2.04	2127	.340	.09
			2250	.08	2.06	2129	.221	.10
						2130	.367	.11
						2131	.518	.11
						2132	.340	.12
						2135	.289	.14
						2137	.221	.15
						2139	.154	.15
						2141	.113	.16
						2143	.0851	.16
						2147	.0551	.16
						2154	.0231	.17
						2204	.0097	.17
						2218	.0014	.17
						2226	.0014	.17
						2228	.0097	.17
						2231	.0231	.17
						2233	.0725	.18
						2234	.113	.18
						2236	.181	.18
						2237	.243	.18
						2238	.340	.19
						2241	.381	.21
						2243	.395	.22
						2244	.518	.23
						2245	.622	.24
						2246	.698	.25
						2249	.552	.28
						2251	.409	.30
						2253	.353	.31
						2257	.201	.33
						2259	.163	.33
						2303	.0987	.34
						2307	.0606	.35
						2313	.0311	.35
						2322	.0158	.36
						2328	.0097	.36
						2400	.0000	.36
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1377.								



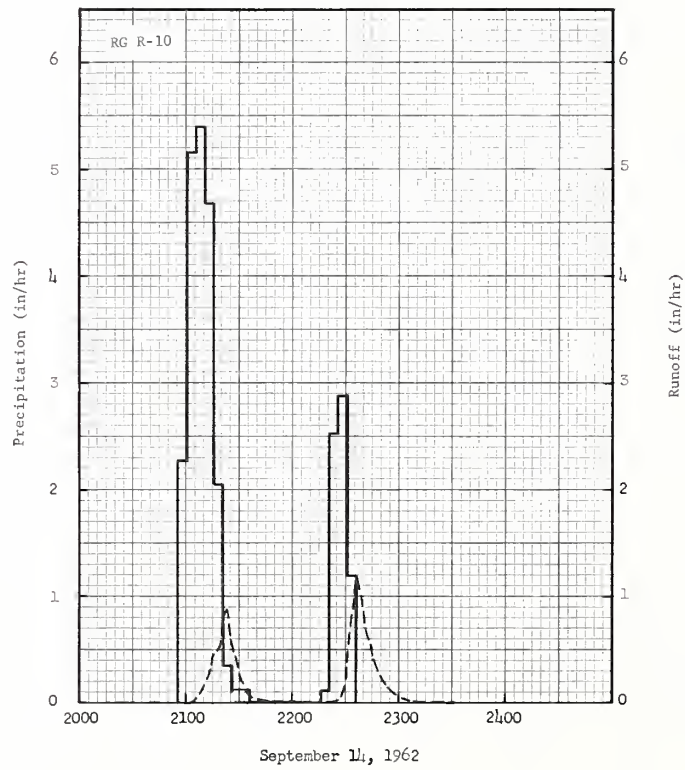
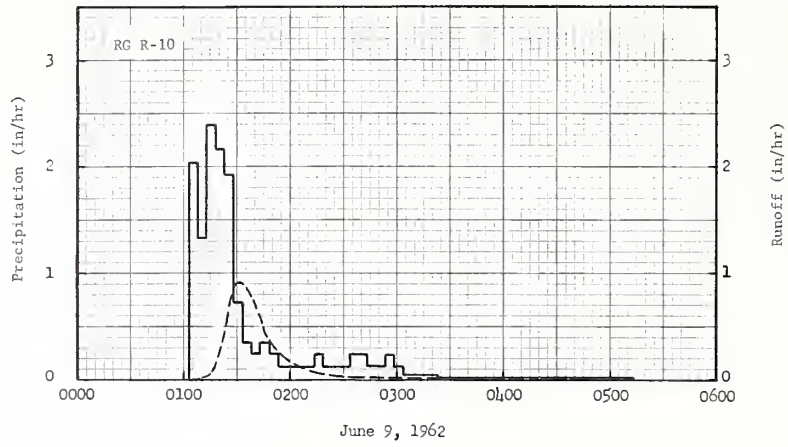
CHEROKEE, OKLAHOMA WATERSHED W-11

MONTHLY PRECIPITATION AND RUNOFF (Inches)								CHEROKEE, OKLAHOMA WATERSHED W-12 AREA — 1.68 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.38 .00	.10 .00	.26 .00	2.15 .06	1.70 .15	5.24 .19	4.53 .31	.34 .00	3.29 .45	.88 .00	.97 .00	.62 .00	20.46 1.46			
STA AV 2/ P (60-62) Q	.28 .00	.21 .00	2.13 .17	1.77 .04	3.49 .88	5.24 1.02	3.96 .44	1.84 .00	2.86 .15	2.17 .02	1.13 .01	.96 T	26.04 2.73			
MEAN P 3/ 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								CHEROKEE, OKLAHOMA WATERSHED W-12								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	1.19	6-9	.41	9-14	.44	9-14	.45	9-14	.45	9-14	.45	6-8	.45	6-1	.49
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	6-2 1961	2.96	6-2 1961	1.28	6-2 1961	1.29	6-2 1961	1.29	6-2 1961	1.29	6-2 1961	1.29	6-2 1961	1.29	6-2 1961	1.29
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-10. 2/ Precipitation and runoff records began July 1960. 3/ Mean P based on 48-yr (1915-62) U. S. Weather Bureau record period at Cherokee, Okla with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS								CHEROKEE, OKLAHOMA WATERSHED W-12								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-20-62	RG R-10 1.50	.15	6-9-62	RG R-10		6-9-62										
5-28	.20	.00	0103	.00	.00	0103	.0000	.00								
6-1	.99	.04	0108	2.04	.17	0109	.0085	T								
6-2	.86	T	0113	1.32	.28	0112	.0279	T								
6-3	.03	.00	0118	2.40	.48	0115	.0454	T								
6-5	.26	.00	0123	2.16	.66	0117	.122	.01								
6-7	.20	.00	0128	1.92	.82	0119	.195	.01								
6-8	.45	T	0133	.72	.88	0121	.299	.02								
			0138	.36	.91	0123	.459	.03								
			0143	.24	.93	0126	.699	.06								
Watershed conditions: 100% of area in wheat 26 to 30 inches high; soil moist throughout the profile.			0148	.36	.96	0128	.853	.09								
			0153	.24	.98	0129	.9007	.10								
			0213	.12	1.02	0131	.925	.13								
			0218	.24	1.04	0134	.9007	.18								
			0233	.12	1.07	0140	.7201	.26								
			0243	.24	1.11	0143	.5803	.29								
			0253	.12	1.13	0145	.475	.31								
			0258	.24	1.15	0149	.381	.34								
			0303	.12	1.16	0152	.312	.36								
			0323	.03	1.17	0155	.250	.37								
			0418	.01	1.18	0157	.205	.38								
			0513	.01	1.19	0200	.166	.39								
						0206	.114	.40								
						0214	.0728	.41								
						0220	.0503	.42								
						0227	.0319	.42								
						0237	.0241	.43								
						0313	.0170	.44								
						0337	.0062	.44								
						0449	.0000	.45								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.12-5.																

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

1962 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA WATERSHED W-12					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of September 11, 1962								
8-24-62	RG R-10 .05	.00	9-11-62	RG R-10		9-11-62		
9-2	.11	.00	2056	.00	.00	2058	.0000	.00
9-7	.09	.00	2101	2.28	.19	2105	.0043	T
9-9	.05	.00	2106	5.16	.62	2106	.0362	T
			2111	5.40	1.07	2107	.0790	T
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2116	4.68	1.46	2109	.107	T
			2121	2.04	1.63	2110	.139	.01
			2126	.36	1.66	2111	.195	.01
			2136	.12	1.68	2112	.238	.01
			ceased			2114	.325	.02
			2216	.00	1.68	2115	.427	.03
			2221	.12	1.69	2118	.475	.05
			2226	2.52	1.90	2119	.526	.06
			2231	2.88	2.14	2120	.638	.07
			2236	1.20	2.24	2121	.720	.08
						2123	.877	.11
						2125	.678	.13
						2126	.562	.14
						2128	.427	.16
						2129	.339	.17
						2130	.262	.17
						2131	.216	.18
						2133	.139	.18
						2134	.0923	.18
						2136	.0668	.19
						2138	.0454	.19
						2140	.0319	.19
						2146	.0139	.19
						2148	.0085	.19
						2212	.0000	.19
						2218	.0000	.19
						2225	.0085	.19
						2227	.0362	.19
						2228	.0790	.19
						2229	.139	.20
						2230	.238	.20
						2231	.396	.20
						2232	.562	.21
						2233	.720	.22
						2234	.830	.24
						2235	.950	.25
						2236	1.19	.27
						2238	1.05	.31
						2240	.877	.34
						2242	.678	.36
						2244	.526	.38
						2246	.396	.40
						2250	.238	.42
						2254	.130	.43
						2258	.0728	.44
						2304	.0279	.44
						2308	.0139	.44
						2312	.0085	.45
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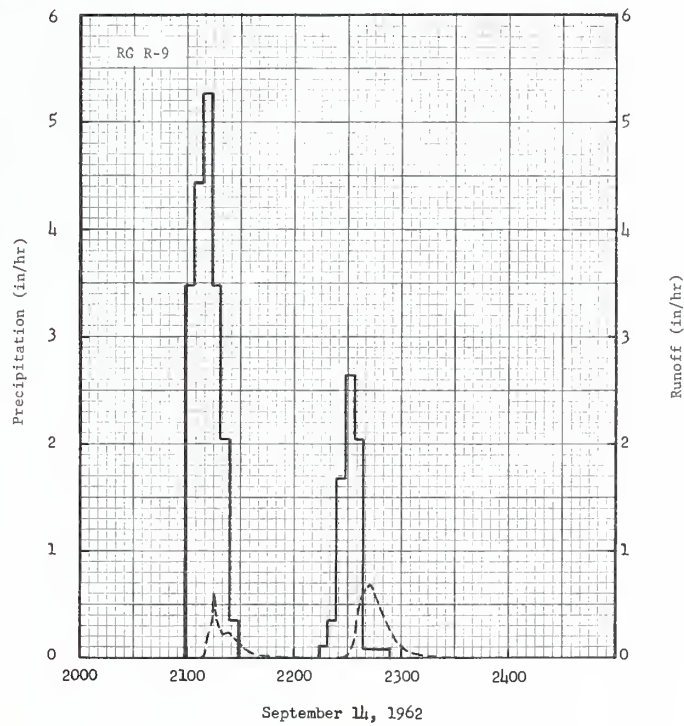
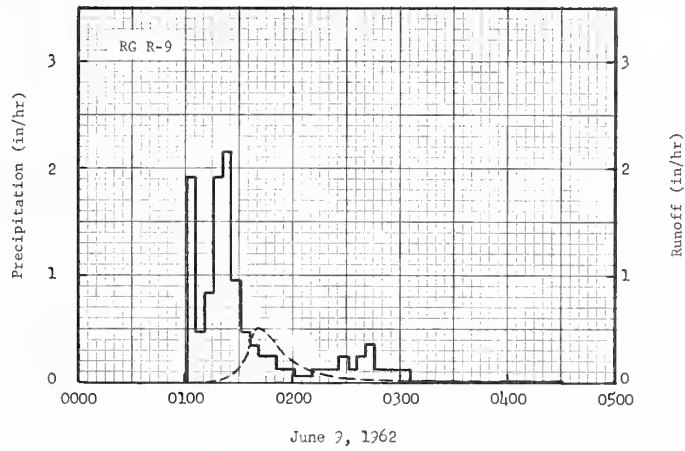
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940.



CHEROKEE, OKLAHOMA WATERSHED W-12

MONTHLY PRECIPITATION AND RUNOFF (Inches)								CHEROKEE, OKLAHOMA WATERSHED W-13 AREA — 1.99 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.31 .00	.11 .00	.27 .00	2.37 .02	1.73 .02	5.25 .25	4.49 .13	.35 .00	3.34 .30	1.00 .00	1.04 .00	.75 .00	21.01 0.72			
STA AV (60-62) 2/P Q	.20 .00	.18 .00	2.21 .21	1.94 .04	3.57 .81	5.35 .86	3.91 .22	1.87 .00	2.96 .10	2.19 T	1.18 .00	1.01 T	26.57 2.24			
MEAN P 3/ 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								CHEROKEE, OKLAHOMA WATERSHED W-13								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	.68	6-9	.23	9-14	.30	9-14	.30	9-14	.30	9-14	.30	9-14	.30	9-14	.30
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	6-2 1961	2.83	6-2 1961	1.16	6-2 1961	1.20	6-2 1961	1.20	6-2 1961	1.20	6-2 1961	1.20	6-2 1961	1.20	6-2 1961	1.20
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-9. 2/ Precipitation and runoff records began July 1960. 3/ Mean P based on 48-yr. (1915-62) U. S. Weather Bureau record period at Cherokee, Okla., with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS								CHEROKEE, OKLAHOMA WATERSHED W-13								
Antecedent conditions			Rainfall					Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-20	RG R-9 1.51	0.02	6-9-62	RG R-9		6-9-62										
5-28	.22	.00	0101	.00	.00	0112	.0000	.00								
6-1	.98	T	0106	1.92	.16	0119	.0071	T								
6-2	.95	.00	0111	.48	.20	0121	.0173	T								
6-3	.03	.00	0116	.84	.27	0125	.0382	T								
6-5	.24	.00	0121	1.92	.43	0127	.0721	T								
6-7	.23	.00	0126	2.16	.61	0128	.0879	.01								
6-8	.50	.00	0131	.96	.69	0130	.156	.01								
			0136	.48	.73	0132	.191	.02								
			0141	.36	.76	0135	.286	.03								
Watershed conditions: 100% of area in wheat 26 to 30 inches high; soil moist throughout the profile.																
			0151	.24	.80	0137	.429	.04								
			0201	.12	.82	0139	.489	.05								
			0211	.06	.83	0141	.522	.07								
			0226	.12	.86	0144	.489	.10								
			0231	.24	.88	0149	.4006	.13								
			0236	.12	.89	0153	.322	.16								
			0241	.24	.91	0159	.2105	.18								
			0246	.36	.94	0205	.140	.20								
			0306	.12	.98	0212	.0963	.21								
			0356	.01	.99	0217	.0778	.22								
			0431	.02	1.00	0221	.0613	.23								
						0227	.0424	.23								
						0231	.0343	.23								
						0248	.0203	.24								
						0308	.0093	.25								
						0323	.0053	.25								
						0426	.0000	.25								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.0066. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.13-5:																

1962 SELECTED RUNOFF EVENTS						CHEROKEE, OKLAHOMA WATERSHED W-13		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of September 11, 1962								
8-24	RG R-9 .05	.00	9-11-62	RG R-9		9-11-62		
9-2	.11	.00	2059	.00	.00	2102	.0000	.00
9-7	.09	.00	2104	3.48	.29	2109	.0036	T
9-9	.05	.00	2109	4.44	.66	2110	.0305	T
			2114	5.28	1.10	2111	.0666	T
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2119	3.48	1.39	2112	.182	T
			2124	2.04	1.56	2113	.252	.01
			2129	.36	1.59	2114	.360	.01
			ceased			2115	.607	.02
			2214	.00	1.59	2116	.360	.03
			2219	.12	1.60	2118	.286	.04
			2224	.36	1.63	2120	.220	.05
			2229	1.68	1.77	2124	.241	.06
			2234	2.64	1.99	2127	.182	.07
			2239	2.04	2.16	2132	.0899	.08
			2254	.08	2.18	2134	.0563	.09
						2138	.0343	.09
						2146	.0305	.09
						2151	.0117	.10
						2210	.0000	.10
						2224	.0000	.10
						2227	.0010	.10
						2229	.0071	.10
						2231	.0563	.10
						2232	.103	.10
						2233	.148	.10
						2234	.241	.10
						2235	.334	.11
						2236	.415	.12
						2237	.505	.12
						2239	.607	.14
						2243	.681	.18
						2246	.572	.22
						2248	.474	.23
						2250	.387	.25
						2253	.297	.27
						2255	.220	.27
						2257	.164	.28
						2300	.110	.29
						2303	.0666	.29
						2306	.0424	.29
						2308	.0305	.30
						2312	.0173	.30
						2319	.0071	.30
						2336	.0000	.30
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.0066.								

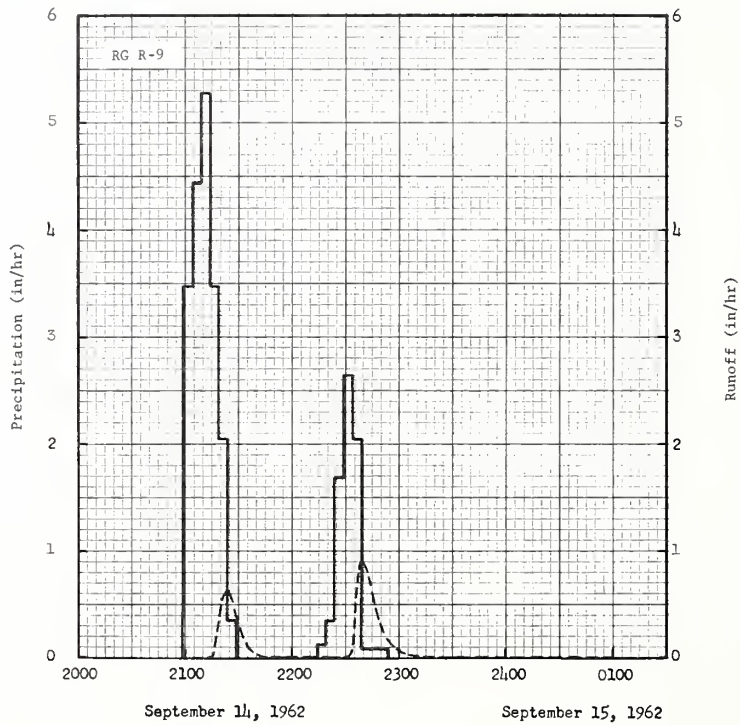
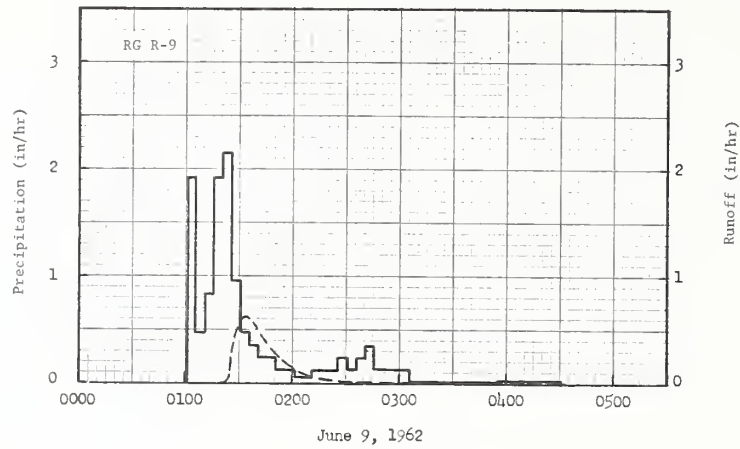


CHEROKEE, OKLAHOMA WATERSHED W-13

MONTHLY PRECIPITATION AND RUNOFF (Inches)								CHEROKEE, OKLAHOMA WATERSHED W-14 AREA — 2.16 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.31 .00	.11 .00	.27 .00	2.37 .09	1.73 .16	5.25 .28	4.49 .10	.35 .00	3.34 .00	1.00 .00	1.04 .00	.75 .00	21.01 0.97			
STA AV 2/ P (60-62) Q	.20 .00	.18 .00	2.21 .09	1.84 .05	3.57 .75	5.35 .76	3.08 .05	1.45 .00	2.96 .12	2.19 .01	1.18 .00	1.01 .01	25.32 1.84			
MEAN P 3/ 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								CHEROKEE, OKLAHOMA WATERSHED W-14								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	.92	6-9	.25	9-14	.34	9-14	.34	9-14	.34	9-14	.34	9-14	.34	9-14	.34
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	6-2 1961	2.29	6-2 1961	1.07	6-2 1961	1.08	6-2 1961	1.08	6-2 1961	1.08	6-2 1961	1.08	6-2 1961	1.08	6-2 1961	1.08
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-9. 2/ Precipitation and runoff records began Sept. 1960. 3/ Mean P based on 48-yr. (1915-62) U. S. Weather Bureau record period at Cherokee, Okla., with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS								CHEROKEE, OKLAHOMA WATERSHED W-14								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-20	RG R-9 1.51	.16	6-9-62	RG R-9		6-9-62										
5-28	.22	.00	0101	.00	.00	0119	.0000	.00								
6-1	.98	.02	0106	1.92	.16	0121	.0010	T								
6-2	.95	.00	0111	.48	.20	0123	.0159	T								
6-3	.03	.00	0116	.84	.27	0124	.0473	T								
6-5	.24	.00	0121	1.92	.43	0125	.0826	T								
6-7	.23	.00	0126	2.16	.61	0126	.184	T								
6-8	.50	.00	0131	.96	.69	0127	.319	.01								
			0136	.48	.73	0128	.421	.01								
			0141	.36	.76	0129	.510	.02								
Watershed conditions: 100% of area in wheat 26 to 30 inches high; soil moist throughout the profile.			0151	.24	.80	0131	.591	.04								
			0201	.12	.82	0134	.625	.07								
			0211	.06	.83	0137	.591	.10								
			0226	.12	.86	0141	.479	.14								
			0231	.24	.88	0145	.394	.17								
			0236	.12	.89	0148	.319	.18								
			0241	.24	.91	0151	.262	.20								
			0246	.36	.94	0154	.212	.21								
			0306	.12	.98	0156	.176	.22								
			0356	.01	.99	0159	.143	.22								
			0431	.02	1.00	0204	.0946	.23								
						0209	.0612	.24								
						0215	.0430	.25								
						0219	.0280	.25								
						0224	.0159	.25								
						0232	.0066	.25								
						0433	.0000	.26								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1780. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.14-4.																

1962 SELECTED RUNOFF EVENTS						CHEROKEE, OKLAHOMA WATERSHED W-14		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of September 14-15, 1962								
8-24	RG R-9 .05	.00	9-14-62	RG R-9		9-14-62		
9-2	.11	.00	2059	.00	.00	2104	.0000	.00
9-7	.09	.00	2104	3.48	.29	2105	.0066	T
9-9	.05	.00	2109	4.44	.66	2110	.0033	T
			2114	5.28	1.10	2115	.0066	T
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2119	3.48	1.39	2116	.0612	T
			2124	2.04	1.56	2117	.151	T
			2129	.36	1.59	2118	.262	.01
			ceased			2119	.355	.01
			2214	.00	1.59	2120	.435	.02
			2219	.12	1.60	2121	.494	.03
			2224	.36	1.63	2122	.591	.04
			2229	1.68	1.77	2124	.625	.06
			2234	2.64	1.99	2126	.591	.08
			2239	2.04	2.16	2127	.494	.08
			2254	.03	2.18	2128	.421	.09
						2130	.319	.10
						2131	.273	.11
						2132	.202	.11
						2134	.136	.12
						2136	.0946	.12
						2138	.0517	.12
						2140	.0351	.13
						2142	.0247	.13
						2146	.0085	.13
						2200	.0010	.13
						2224	.0010	.13
						2231	.0107	.13
						2233	.0715	.13
						2234	.134	.13
						2235	.435	.14
						2236	.625	.15
						2237	.774	.16
						2238	.876	.17
						2239	.919	.19
						2242	.955	.23
						2244	.698	.26
						2246	.558	.28
						2247	.464	.29
						2248	.408	.30
						2250	.319	.31
						2252	.222	.32
						2254	.167	.32
						2256	.121	.33
						2258	.0826	.33
						2300	.0563	.33
						2302	.0430	.34
						2306	.0187	.34
						2310	.0066	.34
						2318	.0010	.34
						2324	.0021	.34
						2400	.0010	.34
						9-15-62		
						0100	.0000	.34

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1780.

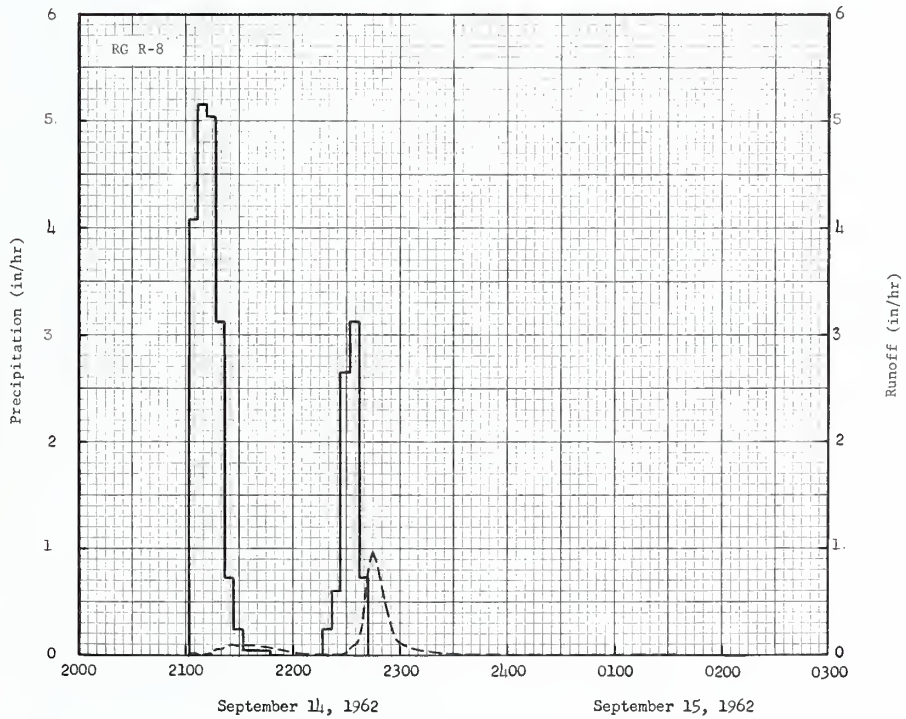
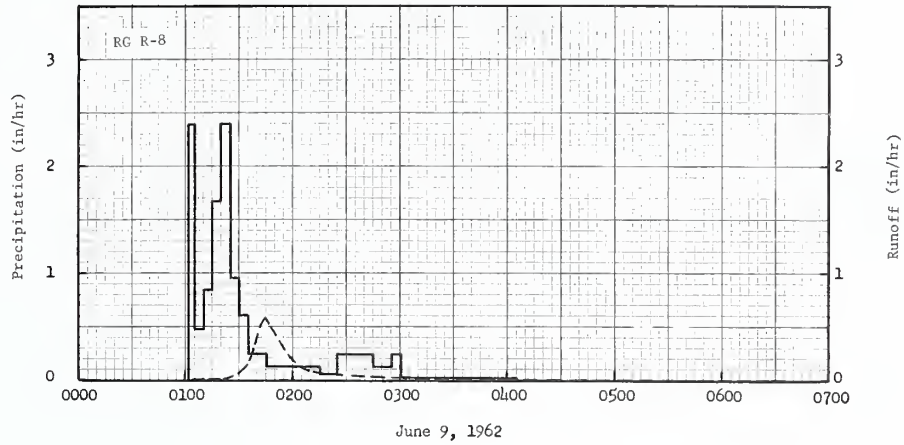


CHEROKEE, OKLAHOMA WATERSHED W-11

MONTHLY PRECIPITATION AND RUNOFF (Inches)								CHEROKEE, OKLAHOMA WATERSHED W-15 AREA — 2.15 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.35 .00	.10 .00	.27 .00	2.38 .07	1.80 .05	5.12 .25	4.23 .01	.35 .00	3.23 .30	.97 .00	1.00 .00	.67 .00	20.47 0.68			
STA AV 2/ P (60-62) Q	.23 .00	.18 .00	2.17 .27	1.90 .07	3.51 .27	5.25 .78	2.98 .00	1.36 .00	2.87 .10	2.13 T	1.16 .02	1.01 .01	24.75 2.52			
MEAN P 3/ 48 YR	.81	.91	1.65	2.84	3.88	3.83	2.24	2.91	2.72	2.27	1.36	.97	26.39			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								CHEROKEE, OKLAHOMA WATERSHED W-15								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-14	.98	9-14	.23	9-14	.28	9-14	.30	9-14	.30	9-14	.30	9-14	.30	9-14	.30
MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1962	6-2 1961	2.64	6-2 1961	1.11	5-7 1961	1.16	5-7 1961	1.19	5-7 1961	1.19	5-7 1961	1.19	5-7 1961	1.19	5-4 1961	1.50
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: All of area in continuous wheat annually. Amount of runoff may have been reduced during the spring months due to an excellent growth of the wheat plants. 1/ Precipitation obtained from rain gage R-8. 2/ Precipitation and runoff records began Sept. 1960. 3/ Mean P based on 48-yr. (1915-62) U. S. Weather Bureau record period at Cherokee, Okla. with 20 missing months between 1943-59 estimated.																
1962 SELECTED RUNOFF EVENTS								CHEROKEE, OKLAHOMA WATERSHED W-15								
Antecedent conditions			Rainfall					Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
RG R-8			Event of June 9, 1962													
5-20-62	1.57	.05	6-9-62	RG R-8		6-9-62										
5-28	.21	.00	0102	.00	.00	0104	.0000	.00								
6-1	.98	.01	0105	2.40	.12	0124	.0071	T								
6-2	.91	.00	0110	.48	.16	0127	.0306	T								
6-3	.03	.00	0115	.84	.23	0130	.0490	T								
6-5	.22	.00	0120	1.68	.37	0133	.0972	.01								
6-7	.23	.00	0125	2.40	.57	0136	.198	.01								
6-8	.49	.00	0130	.96	.65	0138	.348	.02								
			0135	.60	.70	0140	.418	.04								
			0145	.24	.74	0142	.510	.05								
Watershed conditions: 100% of area in wheat 26 to 30 inches high; soil moist throughout the profile.			0215	.12	.80	0145	.578	.08								
			0225	.06	.81	0147	.510	.10								
			0245	.24	.89	0151	.418	.13								
			0255	.12	.91	0153	.348	.14								
			0300	.24	.93	0156	.285	.16								
			0335	.02	.94	0157	.239	.16								
			0405	.02	.95	0158	.198	.16								
						0201	.1603	.17								
						0205	.112	.18								
						0209	.0904	.19								
						0218	.0714	.20								
						0224	.0490	.21								
						0243	.0306	.22								
						0312	.0155	.23								
						0324	.0096	.23								
						0636	.0000	.24								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1679. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.15-4.																

1962 SELECTED RUNOFF EVENTS						CHEROKEE, OKLAHOMA WATERSHED W-15		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of September 14-15, 1962								
8-24-62	RG R-8 .05	.00	9-14-62	RG R-8		9-14-62		
9-2	.12	.00	2102	.00	.00	2102	.0000	.00
9-7	.09	.00	2107	4.08	.34	2103	.0049	T
9-9	.05	.00	2112	5.16	.77	2104	.0096	T
			2117	5.04	1.19	2108	.0049	T
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.			2122	3.12	1.45	2111	.0096	T
			2127	.72	1.51	2113	.0155	T
			2132	.24	1.53	2115	.0228	T
			2147	.04	1.54	2116	.0490	T
			ceased			2118	.0744	T
			2217	.00	1.54	2120	.0597	.01
			2222	.24	1.56	2122	.0638	.01
			2227	.60	1.61	2124	.0972	.01
			2232	2.64	1.83	2130	.0775	.02
			2237	3.12	2.09	2132	.0597	.02
			2242	.72	2.15	2134	.0972	.03
						2140	.0904	.04
						2148	.0744	.05
						2152	.0490	.05
						2156	.0393	.05
						2200	.0266	.06
						2202	.0190	.06
						2204	.0071	.06
						2210	.0049	.06
						2228	.0049	.06
						2229	.0155	.06
						2230	.0306	.06
						2233	.0838	.06
						2236	.112	.07
						2237	.179	.07
						2239	.361	.08
						2241	.543	.09
						2242	.687	.10
						2243	.807	.11
						2244	.937	.13
						2245	.983	.15
						2247	.893	.18
						2249	.726	.20
						2251	.578	.22
						2252	.478	.23
						2254	.361	.25
						2255	.297	.25
						2258	.143	.26
						2304	.0838	.28
						2310	.0597	.28
						2316	.0441	.29
						2320	.0306	.29
						2330	.0096	.29
						2400	.0044	.30
						9-15-62		
						0135	.0000	.30

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1679.

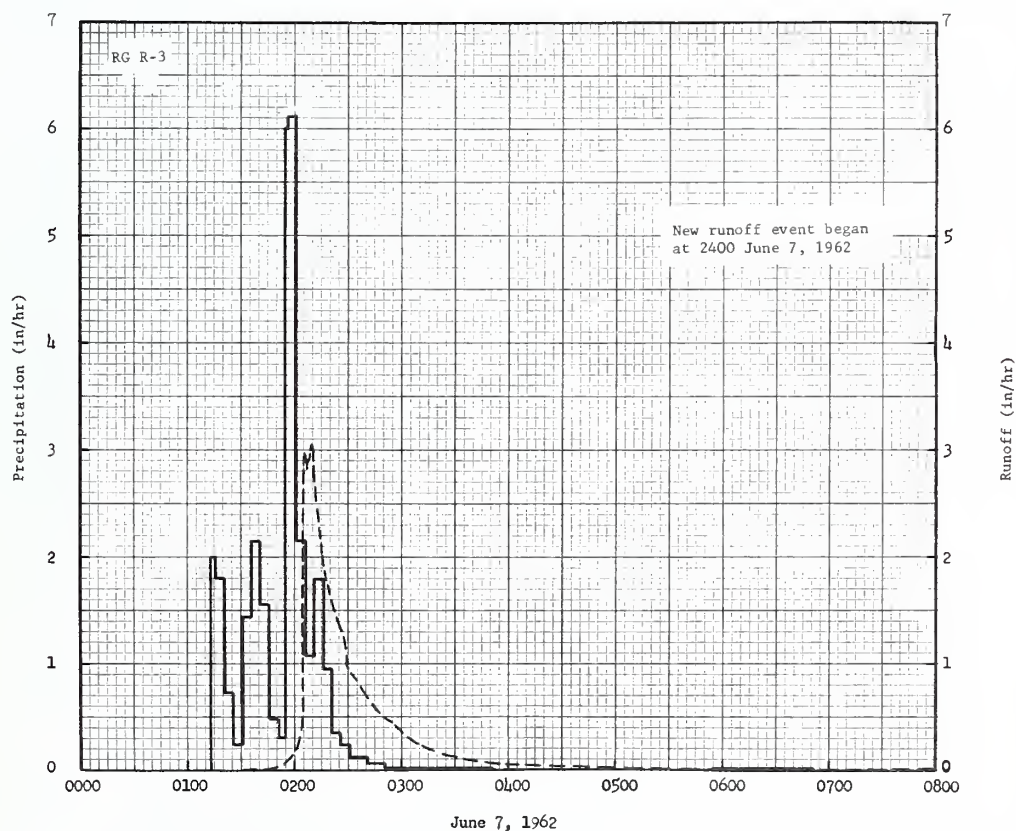


CHEROKEE, OKLAHOMA WATERSHED W-15

MONTHLY PRECIPITATION AND RUNOFF (Inches)								STILLWATER, OKLAHOMA WATERSHED W-1 AREA—16.7 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.71 .53	.62 .47	1.33 .66	1.12 .08	1.44 .00	8.10 3.80	4.50 .03	.94 .04	3.55 .00	2.34 .04	1.36 .09	1.46 .22	27.47 5.96			
STA AV 2/ P (51-62) Q	.53 .07	1.16 .18	2.13 .76	2.26 .63	5.65 2.15	4.34 1.23	4.63 .91	2.37 .06	3.34 .35	2.86 .83	1.41 .27	1.10 .22	31.78 7.66			
MEAN P 3/ 70 YR	1.11	1.28	2.12	3.44	4.79	4.17	3.09	3.03	3.72	2.91	2.05	1.36	33.07			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								STILLWATER, OKLAHOMA WATERSHED W-1								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-7	3.06	6-7	1.20	6-7	1.35	6-7	1.40	6-7	1.41	6-7	1.42	6-7	1.45	6-1	3.43
MAXIMUMS FOR PERIOD OF RECORD																
1951 to 1962	4-18 1957	6.99	7-15 1951	3.31	7-15 1951	3.74	7-15 1951	3.96	10-2 1959	4.52	7-14 1951	5.18	10-1 1959	5.68	9-29 1959	7.62
Notes: Quality of records: Monthly P, excellent; monthly Q, excellent except Jan., which is fair due to the water in the well being frozen up during Jan. 9-26; annual maximum discharges and volumes, excellent. Watershed conditions: All native grass pasture, overgrazed from early spring to July 2, but the grass made a fair recovery after the cattle herd was removed for the balance of the year. 1/ Precipitation obtained from rain gage R-3. 2/ Precipitation and runoff records began July 1951. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Stillwater, Okla.																
1962 SELECTED RUNOFF EVENT								STILLWATER, OKLAHOMA WATERSHED W-1								
Antecedent conditions				Rainfall					Runoff							
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 7, 1962																
5-20-62	RG R-3 .02	.000	6-7-62	RG R-3		6-7-62										
5-25	.01	.000	0113	.00	.00	0131	.0000	.000								
5-26	.02E	.000	0116	2.00	.10	0118	.0122	.001								
5-28	1.39	.000	0121	1.80	.25	0152	.0274	.002								
6-1	2.16	.542	0126	.72	.31	0154	.0399	.003								
6-2	.37	.167	0131	.24	.33	0156	.0774	.005								
6-3	.00	.017	0136	1.44	.45	0158	.107	.008								
6-4	.00	.007	0141	2.16	.63	0200	.148	.012								
			0146	1.56	.76	0201	.191	.015								
			0151	.48	.80	0203	.323	.024								
Watershed conditions: 100% of area in native grass pasture, in poor condition due to overgrazing.			0155	.30	.82	0204	.470	.030								
			0156	6.00	.92	0205	2.82	.057								
			0201	6.12	1.43	0206	2.97	.106								
			0206	2.16	1.61	0207	2.81	.154								
			0211	1.08	1.70	0208	2.92	.202								
			0216	1.30	1.85	0209	3.06	.252								
			0221	.96	1.93	0210	2.90	.301								
			0226	.36	1.96	0211	2.81	.349								
			0231	.24	1.98	0212	2.59	.394								
			0241	.12	2.00	0214	2.17	.473								
			0251	.06	2.01	0217	1.84	.574								
			0351	.01	2.02	0220	1.68	.662								
			0556	.00	2.02	0223	1.50	.741								
			0651	.02	2.04	0225	1.37	.789								
						0227	1.31	.834								
						0229	1.08	.873								
						0230	.959	.890								
						0232	.929	.922								
						0234	.886	.952								
						0235	.832	.967								
						0236	.796	.980								
						0238	.761	1.006								
						0242	.674	1.055								
						0246	.557	1.096								
						0250	.490	1.131								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.839. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 37.1-7.																

1962 SELECTED RUNOFF EVENT					STILLWATER, OKLAHOMA WATERSHED W-1			
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 7, 1962 — continued						6-7-62		
						0255	.148	1.171
						0258	.393	1.192
						0301	.347	1.211
						0306	.283	1.237
						0312	.225	1.262
						0320	.168	1.288
						0329	.129	1.311
						0341	.0917	1.333
						0354	.0637	1.350
						0406	.0452	1.361
						0421	.0330	1.370
						0445	.0202	1.381
						0531	.0097	1.391
						0553	.0073	1.395
						0917	.0017	1.406
						1440	.0008	1.412
						2400	<u>1/</u> .0004	1.418

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.839. 1/ BEGINNING OF NEW RUNOFF EVENT.

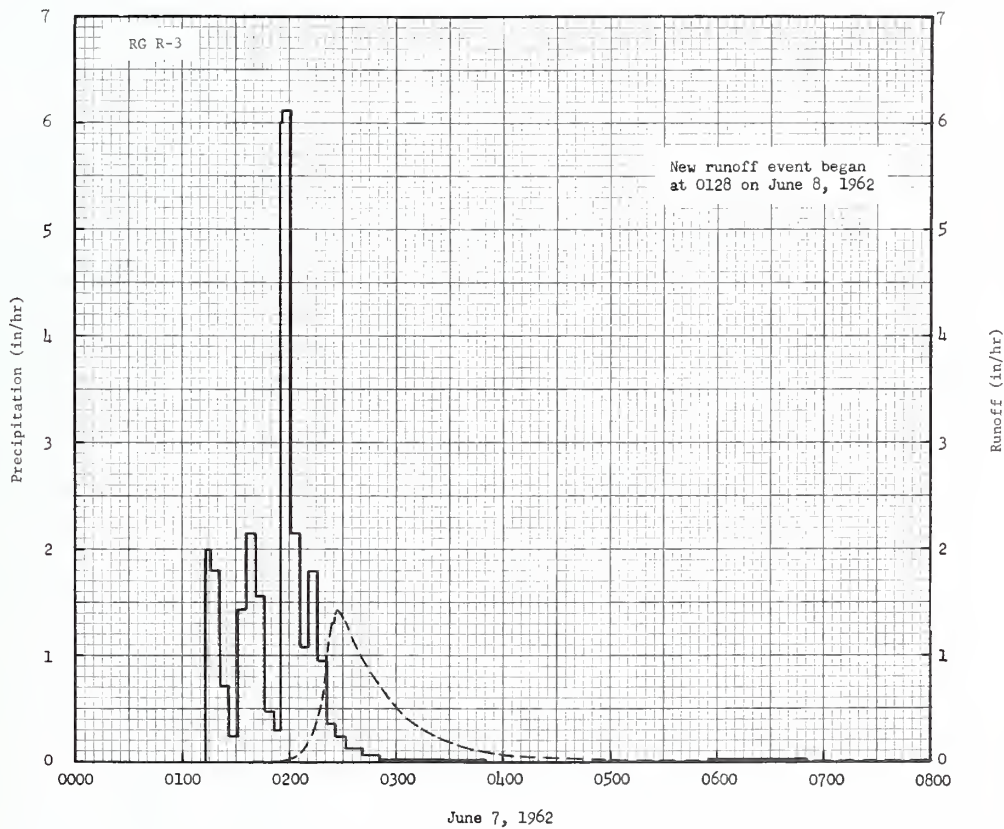


STILLWATER, OKLAHOMA WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								STILLWATER, OKLAHOMA WATERSHED W-3 AREA—92.0 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.71 .19	0.62 .14	1.33 .35	1.12 .03	1.44 .00	8.10 2.30	4.50 .01	.94 .01	3.55 .00	2.34 .00	1.36 .01	1.46 .03	27.47 3.07			
STA AV 2/ P (51-62) Q	.53 .05	1.16 .12	2.13 .64	2.26 .55	5.65 2.00	4.34 1.07	4.63 .92	2.37 .07	3.34 .36	2.86 .80	1.41 .16	1.10 .11	31.78 6.85			
MEAN P 3/ 70 YR	1.11	1.28	2.12	3.44	4.79	4.17	3.09	3.03	3.72	2.91	2.05	1.36	33.07			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								STILLWATER, OKLAHOMA WATERSHED W-3								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-7	1.43	6-7	.80	6-7	.96	6-7	1.03	6-7	1.04	6-7	1.04	6-7	1.05	6-1	2.20
MAXIMUMS FOR PERIOD OF RECORD																
1951 to 1962	7-15 1951	4.74	7-15 1951	2.87	7-15 1951	3.49	7-15 1951	3.80	10-2 1959	4.96	10-1 1959	5.18	10-1 1959	6.08	9-30 1959	8.08
Notes: Quality of records: Monthly P, excellent; monthly Q, excellent except Jan., which is fair due to water in the well being frozen up during Jan. 9-26; annual maximum discharges and volumes, excellent. Watershed conditions: All native grass pasture. The westerly and northerly portions (68.4% of area) were overgrazed and in poor condition; the balance of area was in excellent condition. 1/ Precipitation obtained from rain gage R-3. 2/ Precipitation and runoff records began July 1951. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Stillwater, Okla.																
1962 SELECTED RUNOFF EVENT								STILLWATER, OKLAHOMA WATERSHED W-3								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 7 - 8, 1962																
5-20-62	RG R-3 .02	.000	6-7-62	RG R-3		6-7-62										
5-25	.01	.000	0113	.00	.00	0139	.0000	.000								
5-26	.02E	.000	0116	2.00	.10	0155	.0058	.001								
5-28	1.39	.000	0121	1.80	.25	0156	.0140	.001								
6-1	2.16	.095	0126	.72	.31	0159	.0185	.002								
6-2	.37	.058	0131	.24	.33	0201	.0442	.003								
6-3	.00	.010	0136	1.44	.45	0203	.0407	.004								
6-4	.00	.005	0141	2.16	.63	0205	.0552	.006								
			0146	1.56	.76	0206	.0735	.007								
			0151	.48	.80	0208	.1144	.010								
Watershed conditions: 100% of area																
			0155	.30	.82	0210	.183	.016								
			0156	6.00	.92	0213	.276	.027								
			0201	6.12	1.43	0215	.363	.038								
			0206	2.16	1.61	0217	.478	.052								
			0211	1.08	1.70	0219	.643	.070								
			0216	1.80	1.85	0221	.923	.097								
			0221	.96	1.93	0223	1.24	.132								
			0226	.36	1.96	0224	1.32	.154								
			0231	.24	1.98	0225	1.31	.176								
			0241	.12	2.00	0226	1.39	.198								
			0251	.06	2.01	0227	1.43	.221								
			0351	.01	2.02	0229	1.40	.269								
			ceased			0232	1.31	.336								
			0556	.00	2.02	0235	1.17	.398								
			0651	.02	2.04	0237	1.10	.436								
						0241	.981	.507								
						0243	.910	.538								
						0247	.823	.596								
						0250	.742	.635								
						0254	.635	.681								
						0258	.550	.720								
						0300	.512	.738								
						0307	.403	.791								
						0314	.321	.833								
						0322	.249	.870								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 92.766. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 37.2-6.																

1962 SELECTED RUNOFF EVENT						STILLWATER, OKLAHOMA WATERSHED W-3		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 7-8, 1962—continued						6-7-62		
						0332	.184	.906
						0344	.125	.937
						0404	.0712	.969
						0418	.0485	.983
						0457	.0213	1.004
						0543	.0102	1.016
						0645	.0055	1.023
						0807	.0028	1.029
						0940	.0016	1.032
						1059	.0009	1.034
						2400	.0004	1.040
						6-8-62		
						0128	.0004	1.040

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 92.766. 1/ BEGINNING OF NEW RUNOFF EVENT.



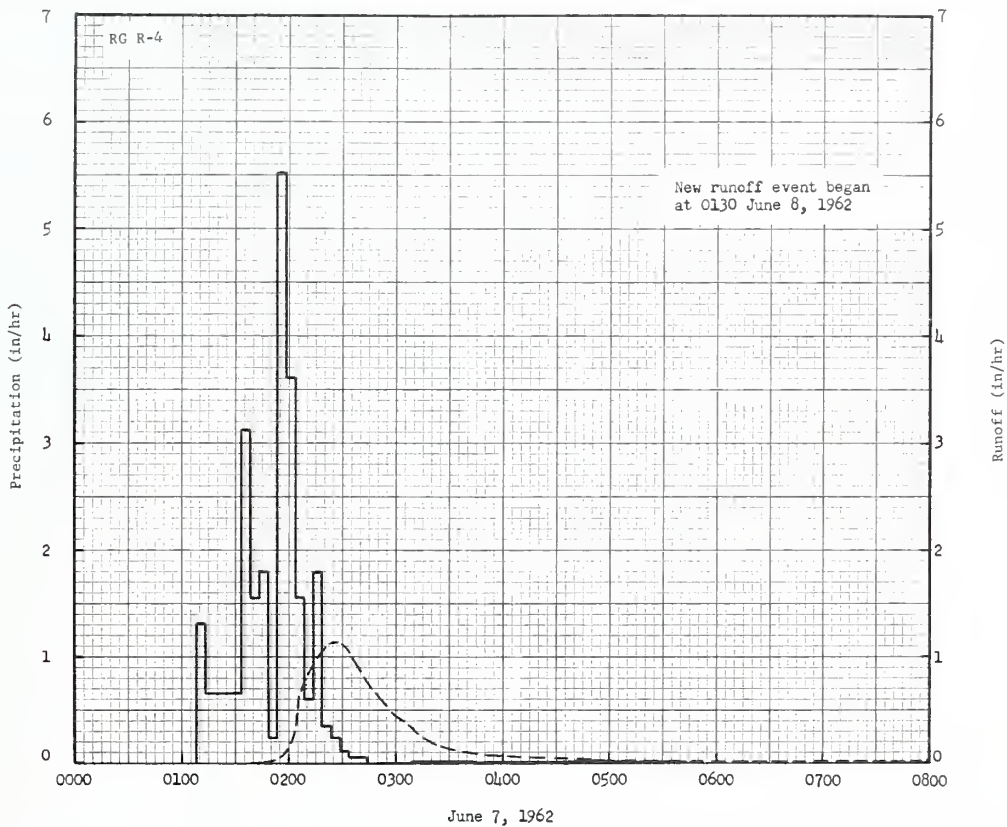
STILLWATER, OKLAHOMA WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF (Inches)								STILLWATER, OKLAHOMA WATERSHED W-4 AREA—206 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.51 .25	.53 .16	1.37 .27	1.22 .08	1.56 T	7.73 2.02	3.51 T	.89 T	3.43 T	2.52 T	1.30 T	1.70 .12	26.27 2.90			
STA AV 2/ P (51-62) Q	.47 .09	1.12 .10	2.10 .46	2.17 .40	5.39 1.61	4.13 1.03	4.31 .71	2.42 .07	3.32 .38	2.85 .72	1.32 .15	1.05 .10	30.65 5.82			
MEAN P 3/ 70 YR	1.11	1.28	2.12	3.44	4.79	4.17	3.09	3.03	3.72	2.91	2.05	1.36	33.07			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								STILLWATER, OKLAHOMA WATERSHED W-4								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-7	1.15	6-7	.82	6-7	1.00	6-7	1.07	6-7	1.09	6-7	1.11	6-7	1.14	6-1	1.88
MAXIMUMS FOR PERIOD OF RECORD																
1951 to 1962	4-18 1957	2.39	4-18 1957	1.48	4-18 1957	1.75	10-2 1959	2.63	10-2 1959	4.49	10-2 1959	4.71	10-1 1959	5.23	9-30 1959	6.77
Notes: Quality of records: Monthly P, excellent; monthly Q, excellent except Jan., which is fair due to the water in the well being frozen during Jan. 9-26; annual maximum discharges and volumes, excellent. Watershed conditions: All native grass, 17.3 percent of area in meadow and 82.7 percent in pasture. The portion in pasture was overgrazed this year and was in poor condition the latter part of the year. 1/ Precipitation obtained from rain gage R-4. 2/ Precipitation and runoff records began July 1951. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Stillwater, Okla.																
1962 SELECTED RUNOFF EVENT								STILLWATER, OKLAHOMA WATERSHED W-4								
Antecedent conditions			Rainfall					Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 7 - 8, 1962																
5-20-62	RG R-4 .01	.0000	6-7-62	RG R-4		6-7-62										
5-25	.02	.0000	0108	.00	.00	0138	.0000	.0000								
5-26	.01	.0000	0113	1.32	.11	0149	.0218	.0017								
5-28	1.52	.0026	0123	.66	.22	0154	.0413	.0044								
5-29	.00	.0010	0133	.66	.33	0156	.0697	.0062								
6-1	1.94	.1790	0138	3.12	.59	0158	.117	.0092								
6-2	.41	.0468	0143	1.56	.72	0201	.197	.0172								
6-3	.00	.0125	0148	1.80	.87	0203	.317	.0255								
6-4	.00	.0008	0153	.24	.89	0204	.445	.0318								
			0158	5.52	1.35	0205	.536	.0400								
Watershed conditions: 100% of area in native grass, 17.3% in meadow and 82.7% in pasture. The pasture had been overgrazed and was in poor condition.			0203	3.60	1.65	0207	.660	.0596								
			0208	1.56	1.78	0209	.736	.0830								
			0213	.60	1.83	0211	.837	.1090								
			0218	1.80	1.98	0213	.892	.1377								
			0223	.36	2.01	0215	.957	.1687								
			0228	.24	2.03	0218	1.06	.2186								
			0233	.12	2.04	0221	1.11	.2731								
			0243	.06	2.05	0224	1.14	.3295								
			ceased			0228	1.15	.4062								
			0308	.00	2.05	0233	1.06	.4983								
			0343	.02	2.06	0236	.992	.5496								
			0443	.01	2.07	0240	.887	.6124								
			0543	.01	2.08	0243	.776	.6542								
						0246	.726	.6918								
						0250	.642	.7372								
						0254	.552	.7772								
						0259	.474	.8198								
						0305	.404	.8637								
						0310	.319	.8942								
						0317	.226	.9255								
						0321	.190	.9394								
						0326	.161	.9540								
						0332	.134	.9687								
						0339	.110	.9830								
						0353	.0728	1.0042								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 207.72. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 37.3-6.																

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

1962 SELECTED RUNOFF EVENT					STILLWATER, OKLAHOMA WATERSHED W-4			
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 7-8, 1962—Continued						6-7-62		
						0420	.0399	1.0286
						0457	.0201	1.0461
						0541	.0116	1.0573
						0648	.0070	1.0673
						0734	.0055	1.0721
						0930	.0037	1.0807
						1315	.0023	1.0915
						2400	.0014	1.1101
						6-8-62		
						0130	1/ .0014	1.1122

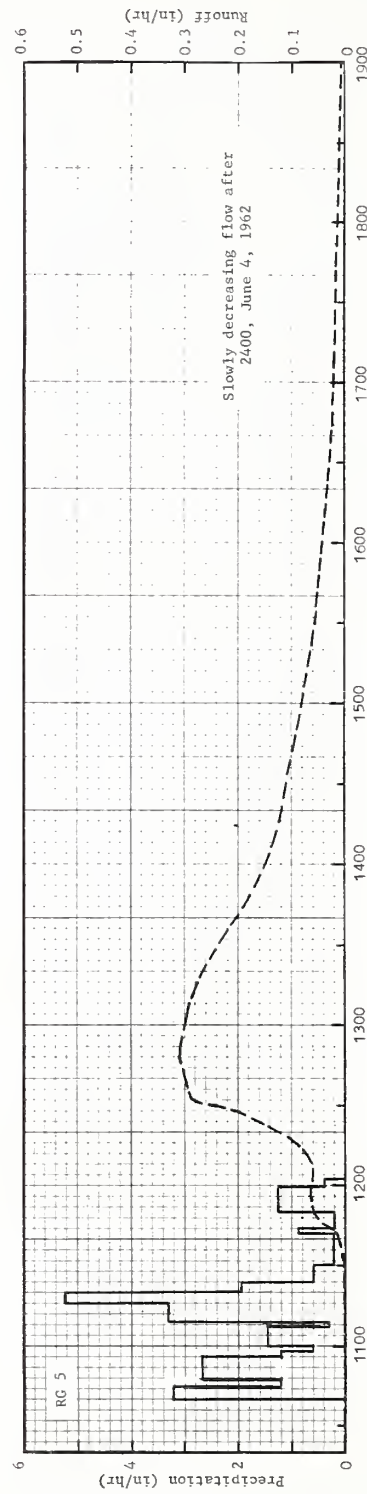
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 207.72. 1/ BEGINNING OF NEW RUNOFF EVENT.



STILLWATER, OKLAHOMA WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (Inches)									RIESEL (WACO), TEXAS WATERSHED C AREA—579 ACRES							
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.19 .03	1.67 .04	1.26 .07	3.42 .13	2.83 .19	6.56 1.19	.40 T	.06 .00	2.80 .00	1.60 T	3.17 .00	1.17 .00	26.13 1.65			
STA AV 2/ P (38-62) Q	1.87 .40	2.84 .53	1.86 .28	3.78 .94	3.87 .81	4.05 .71	1.51 .19	1.91 .02	2.76 .46	3.00 .34	2.94 .40	2.33 .56	32.72 5.64			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS									RIESEL (WACO), TEXAS WATERSHED C							
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-4	.31	6-4	.29	6-4	.46	6-4	.68	6-4	.73	6-4	.75	6-4	.76	6-4	1.03
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	4-19 1957	1.33E	4-19 1957	1.33E	4-19 1957	2.02E	4-23 1957	2.80	9-7 1942	3.06	9-7 1942	3.19	9-7 1942	4.78	4-19 1957	8.76E
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began Feb. 1938. Watershed discontinued from June 30, 1943, to Mar. 1, 1949; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July, and those for 1949 after Mar. 1; no maximums taken for 1938, 1944 through 1948.																
1962 SELECTED RUNOFF EVENT									RIESEL (WACO), TEXAS WATERSHED C							
Antecedent conditions			Rainfall					Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 4-5, 1962																
5-4-62	3 RG 5/ .00	T	6-4-62	RG 5		6-4-62										
5-16	.05	.0000	1040	.00	.00	1042	T	.0000								
5-28	1.38	T	1045	3.24	.27	1044	.0001	T								
5-29	1.40	.1784	1047	1.20	.31	1048	.0001	T								
5-30, 31	.00	.0064	1056	2.67	.35	1104	.0003	.0001								
6-1	.75	.0006	1058	1.20	.39	1112	.0007	.0001								
6-2, 3	.00	.0011	1100	.60	.41	1118	.0018	.0003								
6-4	.00	6/ T	1107	1.46	.58	1128	.0042	.0007								
Watershed conditions: 21% of the area in pasture, 8% in corn in tassel stage, 4% in broadcast grain sorghum in booting stage, 7% in oats stubble, oats harvested, 55% in idle cropland (grass and weeds), 2% in broadcast sudan, and 3% in farmsteads and roads.			1109	.30	.59	1138	.0080	.0018								
			1116	3.32	.97	1142	.0181	.0025								
			1120	5.25	1.32	1146	.0416	.0045								
			1124	1.95	1.45	1156	.0651	.0141								
			1130	.60	1.51	1206	.0627	.0248								
			1142	.22	1.54	1212	.0721	.0315								
			1144	.90	1.57	1216	.0924	.0369								
			1150	.20	1.59	1220	.123	.0441								
			1159	1.27	1.76	1224	.163	.0536								
			1202	.40	1.78	1228	.204	.0658								
			6-4-62	RG 14		1232	.285	.0821								
						1242	.301	.1309								
			1033	.00	.00	1248	.314	.1617								
			1035	1.50	.05	1308	.292	.2628								
			1041	4.30	.48	1320	.266	.3187								
			1043	.90	.51	1340	.203	.3963								
			1049	.30	.54	1400	.152	.4543								
			1103	.60	.68	1420	.123	.4998								
			1107	.30	.70	1440	.100	.5372								
			1110	2.40	.82	1500	.0820	.5676								
			1112	.90	.85	1530	.0603	.6030								
			1117	3.00	1.10	1602	.0434	.6304								
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 583.82. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.4-6. 5/THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT. 6/RUNOFF PRIOR TO 1042.																

SELECTED RUNOFF EVENT			RIESEL (WACO), TEXAS WATERSHED C					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
			Event of June 4-5, 1962—continued					
			6-4-62			6-4-62		
			1119	1.80	1.16	1712	.0235	.6678
			1123	.60	1.20	1902	.0114	.6975
			1129	.50	1.25	2102	.0069	.7153
			1139	.06	1.26	2400	.0040	.7308
			1141	1.80	1.32	6-5-62		
			1147	.50	1.37	0300	.0025	.7404
			1245	.03	1.40	1030	.0010	.7528
						1720	.0004	.7587
			RG	20	1.32	2400	<u>1/</u> .0003	.7604
			3 RG	AVG <u>2/</u>	1.65			
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 583.82. <u>1/</u> SLOWLY DECREASING FLOW AFTER 2400. <u>2/</u> THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT.								

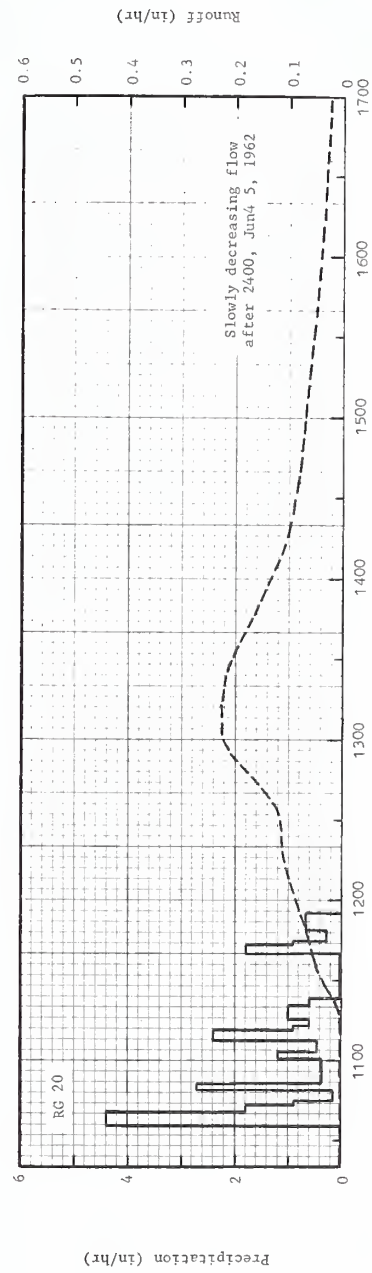


June 4, 1962

RIESEL (WACO), TEXAS WATERSHED C

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED D AREA—1,110 ACRES (1.734 SQ. MILES)								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.19 .01	1.66 .06	1.29 .10	3.46 .19	2.79 .18	6.63 1.24	.48 .01	.06 .00	2.87 .00	1.62 .00	3.27 T	1.19 .00	26.51 1.79			
STA AV 2/ (37-62) P	1.98	2.83	1.96	3.77	3.79	4.10	1.60	1.80	2.67	2.80	2.84	2.34	32.48			
Q	.46	.53	.29	1.02	.93	.71	.21	.04	.42	.33	.37	.53	5.84			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED D								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-4	.22	6-4	.21	6-4	.33	6-4	.56	6-4	.61	6-4	.63	6-4	.64	6-4	1.11
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	4-19 1957	1.03E	4-19 1957	.90E	4-19 1957	1.77E	4-23 1957	3.43	4-23 1957	3.54	4-23 1957	3.72	4-23 1957	5.42	4-19 1957	9.66E
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began Dec. 1937. Watershed discontinued from June 30, 1943, to Mar. 1, 1949; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July 1, and those for 1949 after Mar. 1; no maximums taken for 1944 through 1948.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED D								
Antecedent conditions				Rainfall						Runoff						
Date	Rainfall (inches)		Runoff (inches)	Date and time	Intensity (in/hr)		Acc. (inches)		Date and time	Rate (in/hr)		Acc. (inches)				
				Event of June 4-5, 1962												
5-4,5-62	.00		T	6-4-62	RG 5				6-4-62							
5-16	.05		.0000	1040	.00		.00		1030	T		.0000				
5-28	1.35		T	1045	3.24		.27		1041	.0001		T				
5-29	1.39		.1653	1047	1.20		.31		1050	.0002		T				
5-30,31	.00		.0045	1056	2.67		.35		1054	.0004		T				
6-1	.76		.0007	1058	1.20		.39		1100	.0010		.0001				
6-2,3	.00		.0035	1100	.60		.41		1104	.0020		.0002				
6-4	.00		5/ T	1107	1.46		.58		1110	.0050		.0005				
				1109	.30		.59		1122	.0117		.0021				
				1116	3.32		.97		1128	.0278		.0041				
Watershed conditions: 22% of area in pasture, 11% in corn in tassel stage, 11% in oats stubble, oats harvested, 2% in cotton in square stage, 3% in broadcast grain sorghum in boot stage, 2% in broadcast sudan,46% in idle crop-land (weeds and grass), and 3% in farmsteads and roads.				1120	5.25		1.32		1136	.0486		.0093				
				1124	1.95		1.45		1158	.0812		.0331				
				1130	.60		1.51		1212	.106		.0555				
				1142	.22		1.54		1222	.111		.0736				
				1144	.90		1.57		1232	.119		.0928				
				1150	.20		1.59		1240	.145		.1105				
				1159	1.27		1.76		1248	.178		.1319				
				1202	.40		1.78		1254	.203		.1510				
									1304	.222		.1863				
				6-4-62	RG 20				1314	.223		.2234				
				1035	.00		.00		1324	.219		.2603				
				1041	4.40		.44		1334	.197		.2949				
				1043	1.80		.50		1344	.171		.3257				
				1045	.90		.53		1354	.144		.3519				
				1049	.15		.54		1404	.122		.3741				
				1051	2.70		.63		1414	.104		.3929				
				1101	.36		.69		1434	.0852		.4243				
				1103	1.20		.73		1504	.0693		.4623				
				1107	.45		.76		1544	.0502		.5021				
				1111	2.40		.92		1702	.0259		.5501				
				1113	.90		.95		1822	.0146		.5762				
				1115	.60		.97		2032	.0071		.5984				
				1121	1.00		1.07		2400	.0034		.6155				
				1123	.60		1.09		6-5-62							
				1140	.04		1.10		0600	.0015		.6287				
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1,119.25. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.4-6. 5/THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE USED FOR EVENT. 6/RUNOFF PRIOR TO 1030.																

SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS WATERSHED D		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
<u>Event of June 4-5, 1962—continued</u>								
			6-4-62			6-5-62		
			1143	1.80	1.19	1400	.0007	.6366
			1145	.90	1.22	2100	.0003	.6402
			1149	.30	1.24	2400	<u>1/</u> .0002	.6410
			1155	.70	1.31			
			RG	14	1.40			
			RG	26A	1.11			
			4 RG	AVG <u>2/</u>	1.50			
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1,119.25. <u>1/</u> SLOWLY DECREASING FLOW AFTER 2400. <u>2/</u> THIESSEN WEIGHTED, USING SAME RAIN GAGES AS SHOWN FOR EVENT.								



June 4, 1962

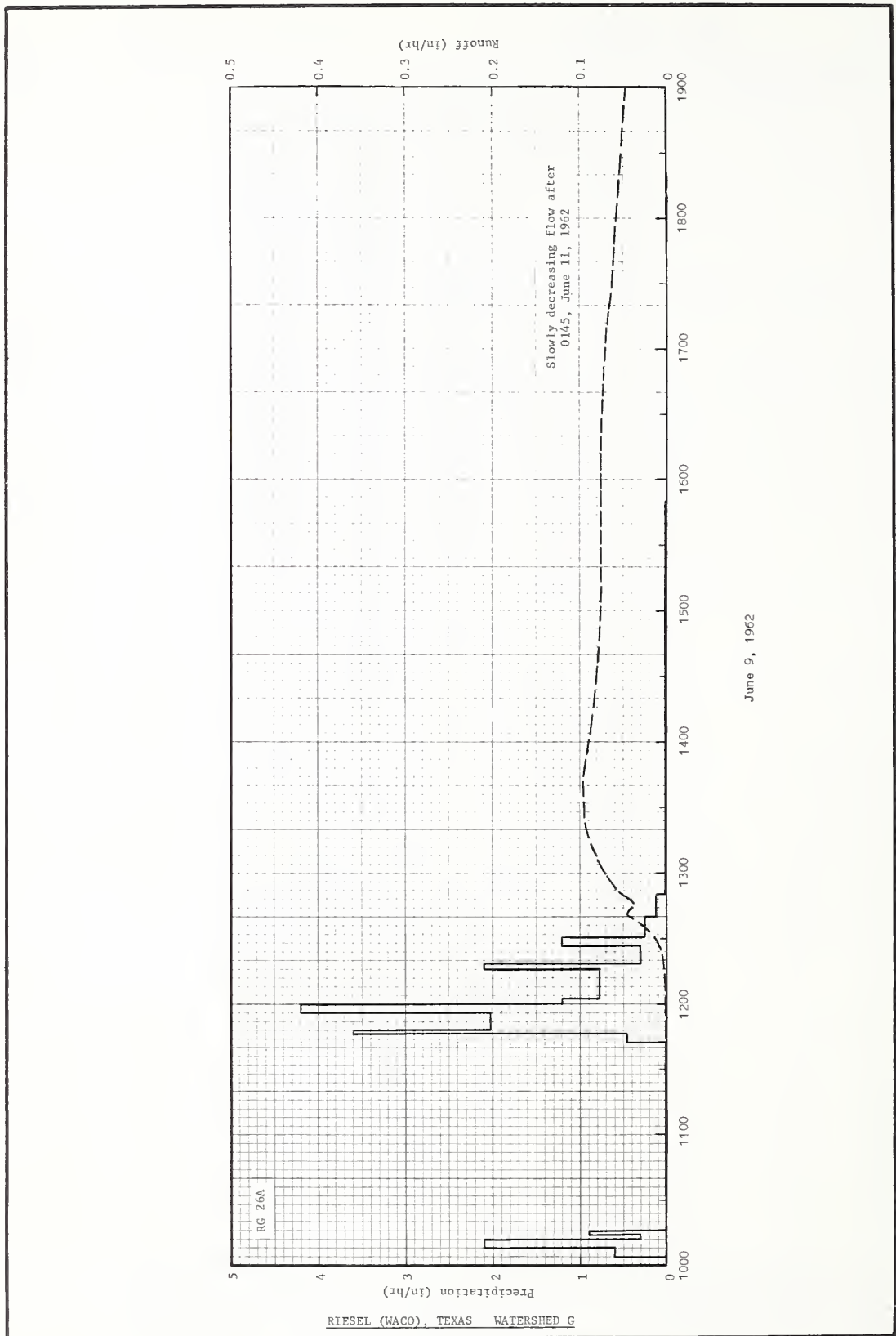
RIESEL (WACO), TEXAS WATERSHED D

MONTHLY PRECIPITATION AND RUNOFF (Inches)									RIESEL (WACO), TEXAS WATERSHED G AREA—4,380 ACRES (6.84 SQ. MILES)							
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.25 .02	1.57 .05	1.20 .08	3.74 .39	2.56 .14	6.29 1.05	.35 .02	.10 .00	2.71 .00	2.23 .00	3.66 .01	1.25 .00	26.91 1.76			
STA AV 2/ P (38-62) Q	2.31 .83	3.10 .79	1.67 .23	3.30 .44	3.06 .40	5.81 1.30	1.97 .20	2.29 .06	2.83 .49	3.11 .23	2.91 .60	2.86 .69	35.22 6.26			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS									RIESEL (WACO), TEXAS WATERSHED G							
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.10	6-9	.09	6-9	.17	6-9	.44	6-9	.57	6-9	.60	6-8	.62	6-4	.92
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	11-22 1940	.42	11-22 1940	.40	11-22 1940	.72	11-22 1940	1.54	11-22 1940	1.94	11-22 1940	2.74	11-22 1940	4.18	11-22 1940	4.82
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use since 1957. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began Jan. 1938. Watershed discontinued from June 30, 1943 to July 1, 1957; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July 1; no maximums taken for 1944 through 1957.																
1962 SELECTED RUNOFF EVENT									RIESEL (WACO), TEXAS WATERSHED G							
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9-11, 1962																
5-16-62	13 RG 5/ .04	.0000	6-9-62	RG 5	.00	6-9-62										
5-28	1.13	.0000	1011	.00	.00	1036	.0003	.0000								
5-29	1.39	.1298	1014	3.20	.16	1156	.0003	.0004								
5-30, 31	.00	.0038	1019	.60	.21	1206	.0007	.0004								
6-1	.90	.0045	1148	.01	.23	1216	.0023	.0007								
6-2	.00	.0190	1150	.90	.26	1226	.0080	.0015								
6-3	T .0008	.0008	1154	.45	.29	1231	.0129	.0024								
6-4	.94	.2322	1156	.60	.31	1236	.0260	.0040								
6-5, 6	.00	.0399	1200	.45	.34	1241	.0464	.0071								
6-7	.26	.0015	1210	.60	.44	1246	.0384	.0106								
6-8	.47	.0290	1212	1.50	.49	1251	.0562	.0145								
6-9	.00	6/.0056	1222	.18	.52	1301	.0736	.0253								
			1226	.60	.56	1311	.0854	.0385								
			1230	.15	.57	1316	.0896	.0458								
			1240	.00	.57	1321	.0939	.0534								
Watershed conditions: 19% of area in pasture, 14% in corn in tassel stage, 5% in sorghum hay, 7% in oats stubble, oats harvested, 8% in cotton in early bloom stage, 2% in row grain sorghum in boot stage, 2% in native grass meadow, 40% in idle cropland (grass and weeds), and 3% in farmsteads and roads.																
			1250	.12	.59	1341	.0964	.0851								
			1358	.01	.60	1351	.0933	.1010								
						1406	.0872	.1235								
			6-9-62	RG 26A	.00	1436	.0792	.1650								
			1004	.00	.00	1506	.0759	.2036								
			1008	.60	.04	1516	.0755	.2152								
			1012	2.10	.16	1541	.0761	.2478								
			1014	.30	.17	1551	.0760	.2605								
			1016	.90	.20	1621	.0741	.2981								
			1142	.01	.24	1651	.0702	.3342								
			1146	.45	.25	1726	.0639	.3735								
			1148	3.60	.37	1756	.0582	.4039								
			1156	2.02	.64	1836	.0502	.4401								
			1200	4.20	.92	1916	.0411	.4704								
			1202	1.20	.96	2006	.0299	.5000								
			1216	.77	1.14	2146	.0150	.5349								
			1218	2.10	1.21	2400	.0085	.5610								
			1226	.30	1.25	6-10-62										
			1230	1.20	1.33	0245	.0042	.5769								
			1240	.24	1.37	0715	.0021	.5902								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4, 416.48. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.4-2. 5/THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT. 6/RUNOFF PRIOR TO 1036.																

Cooperative Research Project of USDA and Texas Agricultural Experiment Station

SELECTED RUNOFF EVENT			RIESEL (WACO), TEXAS WATERSHED G					
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 9-11, 1962—continued								
			6-9-62			6-10-62		
			1250	.12	1.39	1515	.0010	.6017
			1550	.02	1.44	1945	.0005	.6051
						2400	.0004	.6068
			6-9-62	RG 65A		6-11-62		
			1148	.00	.00	0145	<u>1</u> / .0003	.6074
			1152	2.10	.14			
			1156	4.50	.44			
			1202	.80	.56			
			1208	3.40	.90			
			1214	1.90	1.09			
			1222	.45	1.15			
			1230	2.40	1.47			
			1234	.45	1.50			
			1410	.03	1.55			
			RG	14	.84			
			RG	20	1.42			
			RG	30A	1.31			
			RG	43A	1.29			
			RG	48A	1.66			
			RG	56A	1.28			
			RG	70	1.73			
			RG	74A	2.19			
			RG	84A	1.73			
			RG	89	2.11			
			13 RG	AVG <u>2</u> /	1.41			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4,416.48. 1/ SLOWLY DECREASING FLOW AFTER 0145. 2/ THIESSEN WEIGHTED, USING 13 RAIN GAGES.

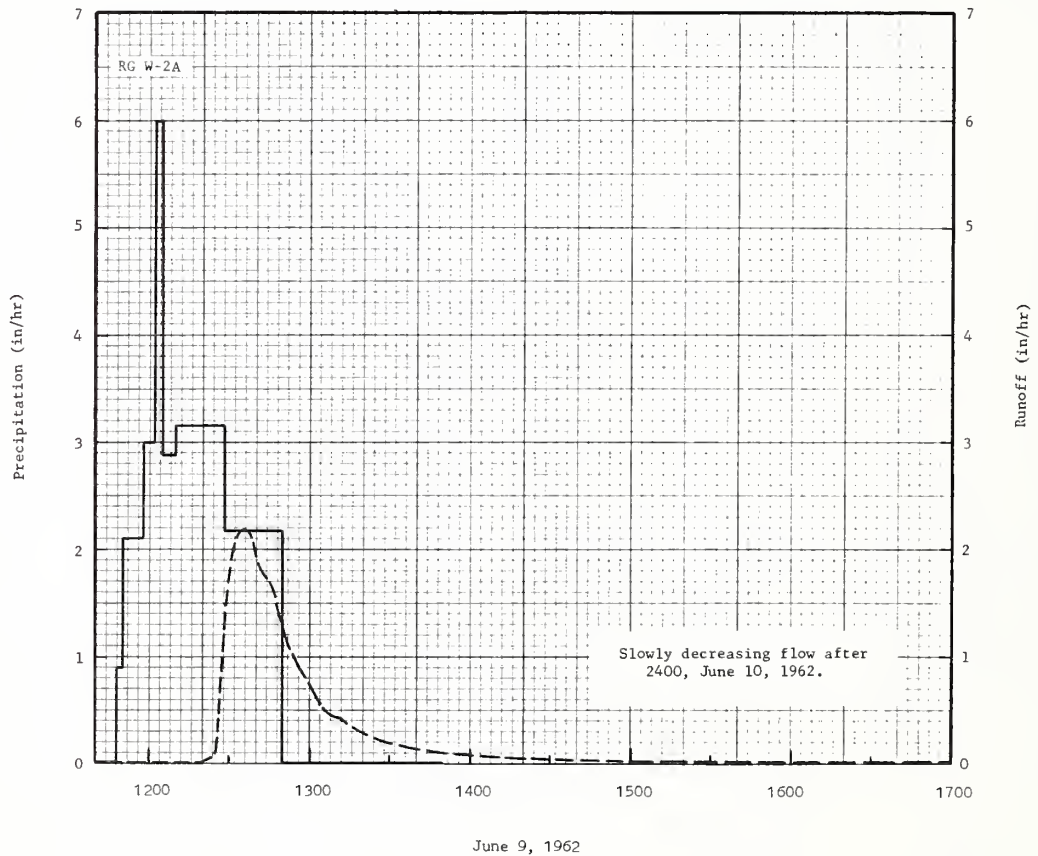


MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED W-1 AREA—176 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.31 .06	1.54 .06	1.05 .04	3.87 .47	2.26 .10	5.65 1.44	.16 T	.02 .00	2.68 .00	3.79 T	4.13 .17	1.45 .01	27.91 2.35			
STA AV 2/ (37-62) Q	2.31 .52	2.77 .64	2.45 .55	3.97 1.03	4.44 1.24	3.62 .65	1.66 .11	1.71 .02	2.27 .16	2.65 .22	2.91 .43	2.70 .53	33.46 6.10			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED W-1								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	2.18	6-9	1.00	6-9	1.12	6-9	1.17	6-9	1.19	6-9	1.19	6-9	1.20	6-1	1.33
MAXIMUMS FOR PERIOD OF RECORD																
1937 to 1962 4/	5-1 1944	4.51	5-1 1944	2.99	5-1 1944	5.57	5-1 1944	6.91	5-1 1944	6.92	5-1 1944	7.05	4-30 1944	9.20	4-29 1944	11.06
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent, Watershed conditions: No appreciable change in land use since 1957. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began July 1937. Part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ No maximums taken for 1937.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED W-1								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
5 RG 5/ Event of June 9-10, 1962																
5-9,12-62	.00	.0005	6-9-62	RG 89		6-9-62										
5-13,14,15	.00	T	1148	.00	.00	1153	T	.0000								
5-16	.03	T	1150	2.40	.08	1156	.0001	T								
5-17	.00	.0001	1155	.36	.11	1200	.0002	T								
5-18,27	.00	T	1159	1.35	.20	1204	.0004	T								
5-28	.94	.0004	1209	5.04	1.04	1206	.0008	T								
5-29	1.29	.0934	1219	2.76	1.50	1209	.0025	.0001								
5-30,31	.00	.0009	1229	2.34	1.89	1214	.0043	.0004								
6-1	1.14	.0886	1239	.30	1.94	1218	.0079	.0008								
6-2	.00	.0505	1319	.96	2.10	1220	.0195	.0012								
6-3	.04	.0017	1329	.03	2.11	1223	.0459	.0029								
6-4	.20	.0020				1225	.0684	.0048								
6-5,6	.00	.0013	6-9-62	RG W-2A		1227	.733	.0192								
6-7	.37	.0025	1148	.00	.00	1229	1.36	.0535								
6-8	.36	.0044	1150	.90	.03	1231	1.95	.1088								
6-9	.00	6/.0008	1158	2.10	.10	1232	2.06	.1422								
			1202	3.00	.50	1233	2.14	.1772								
			1205	6.00	.80	1235	2.18	.2493								
			1210	2.88	1.04	1238	2.12	.3569								
			1228	3.16	1.99	1240	1.95	.4247								
			1250	2.18	2.07	1245	1.70	.5741								
			1350	.01	2.08	1248	1.47	.6535								
			RG	75A	2.01	1252	1.11	.7388								
			RG	W-2	2.07	1256	.915	.8075								
						1300	.733	.8613								
			RG	W-5A	1.96	1304	.566	.8857								
			5 RG	AVG 5/	2.06	1311	.416	.9420								
						1319	.283	.9877								
						1328	.206	1.0240								
						1340	.144	1.0586								
						1354	.0953	1.0859								
						1413	.0600	1.1101								
						1444	.0356	1.1340								
						1536	.0195	1.1570								
						1653	.0096	1.1751								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 177.47. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 42.6-6. 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR THE EVENT. 6/ RUNOFF PRIOR TO 1153.																

Cooperative Research Project of USDA and Texas Agricultural Experiment Station

SELECTED RUNOFF EVENT					RIESEL (WACO), TEXAS WATERSHED W-1			
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 9-10, 1962—continued								
						6-9-62		
						1819	0.0046	1.1852
						2102	.0020	1.1936
						2400	.0010	1.1979
						6-10-62		
						0442	.0005	1.2012
						1155	.0002	1.2038
						1716	.0001	1.2047
						2400	<u>1</u> /.0001	1.2054

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 177.47. 1/ SLOWLY DECREASING FLOW AFTER 2400.

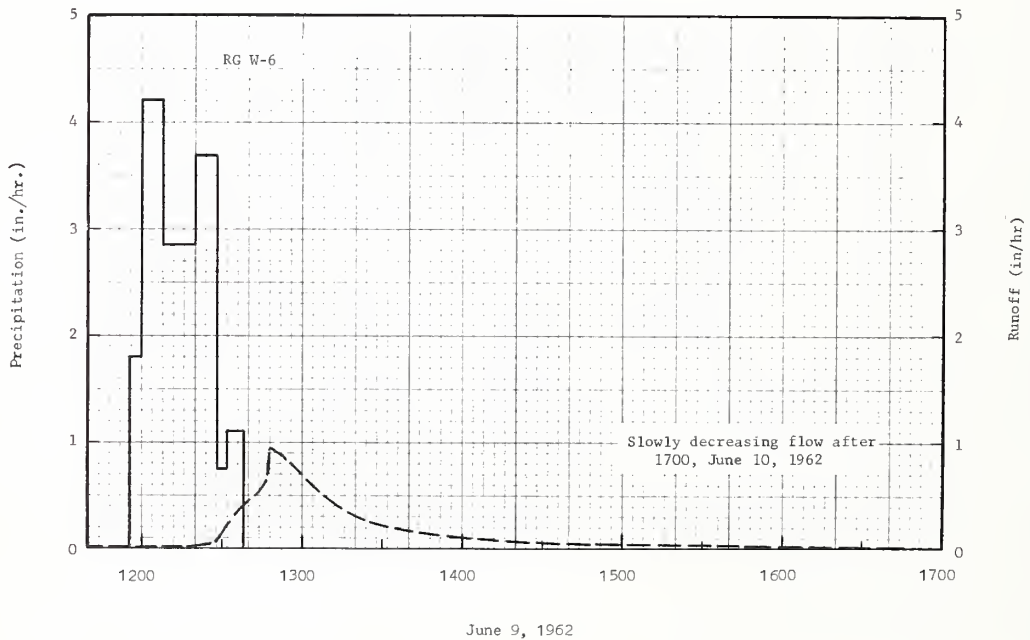


RIESEL (WACO), TEXAS WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED W-2 AREA—130 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.25 .21	1.66 .24	.97 .29	3.74 .42	2.17 .17	5.64 .99	.16 .03	.03 .00	2.92 .00	3.68 .02	4.08 .08	1.40 .08	27.70 2.53			
STA AV 2/ P (37-62) Q	2.26 .59	2.76 .74	2.39 .62	3.95 1.01	4.37 1.24	3.57 .59	1.66 .11	1.73 .01	2.30 .12	2.63 .20	2.86 .42	2.68 .62	33.16 6.27			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED W-2								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.94	6-9	.50	6-9	.65	6-9	.75	6-9	.75	6-9	.76	6-8	.77	6-7	.88
MAXIMUMS FOR PERIOD OF RECORD																
1937 to 1962 4/	5-1 1944	4.83	5-1 1944	2.86	5-1 1944	5.40	5-1 1944	6.91	5-1 1944	6.97	5-1 1944	7.12	4-30 1944	9.26	4-29 1944	10.96
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since September 1957. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began July 1937. Part-year amount not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ No maximums taken for 1937.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED W-2								
Antecedent conditions			Rainfall					Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9-10, 1962																
5-9,15-62	4 RG 5/ .00	.0330	6-9-62	RG W-4		6-9-62										
5-16	.03	.0044	1150	.00	.00	1158	.0003	.0000								
5-17,27	.00	.0311	1156	.20	.02	1203	.0006	.0006 T								
5-28	.91	.0019	1158	1.80	.08	1207	.0011	.0001								
5-29	1.23	.0309	1202	4.65	.39	1210	.0031	.0002								
5-30,31	.00	.0062	1210	4.15	.93	1214	.0060	.0005								
6-1	1.18	.0166	1228	3.63	2.02	1218	.0097	.0010								
6-2	.00	.0133	1230	.60	2.04	1221	.0171	.0016								
6-3	.04	.0062	1250	.30	2.14	1224	.0302	.0028								
6-4	.18	.0081	1350	.01	2.15	1228	.0748	.0059								
6-5,6	.00	.0112				1231	.191	.0125								
6-7	.36	.0101	6-9-62	RG W-6		1234	.286	.0245								
6-8	.33	.0104	1155	.00	.00	1237	.374	.0409								
6-9	.00	6/.0036	1200	1.80	.15	1241	.488	.0696								
			1208	4.20	.71	1244	.546	.0957								
Watershed conditions: 3% of area in cotton 6 in. high, cultivated May 5, terraced, contour rows. 6% in oats-clover, windrowed May 23, terraced. 18% in oats-clover, windrowed May 24, unterraced, on contour. 12% in grain sorghum 12 in. high in boot stage, cultivated May 5, terraced, contour rows. 21% in grain sorghum 12 in. high in boot stage, unterraced, contour rows. 25% in bermudagrass pasture, moderately grazed. 7% in native grass meadow, dense growth, 12 in. high. 3% in Johnsongrass, dense growth, 18 in. high. 5% in farmsteads and gravel roads.			1220	2.85	1.28	1246	.619	.1151								
			1228	3.68	1.77	1247	.683	.1260								
			1232	.75	1.82	1248	.943	.1395								
			1238	1.10	1.93	1252	.889	.2006								
						1255	.819	.2432								
			RG	W-2	2.07	1258	.741	.2822								
			RG	W-5A	1.96	1301	.663	.3173								
			4 RG	AVG 5/	2.03	1304	.587	.3486								
						1310	.472	.4010								
						1317	.354	.4487								
						1323	.280	.4805								
						1329	.228	.5058								
						1334	.193	.5231								
						1342	.159	.5469								
						1352	.130	.5710								
						1402	.107	.5908								
						1412	.0872	.6070								
						1422	.0688	.6200								
						1442	.0480	.6396								
						1522	.0262	.6638								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 131.04. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.7-5. 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT. 6/ RUNOFF PRIOR TO 1158.																

SELECTED RUNOFF EVENT			RIESEL (WACO), TEXAS			WATERSHED W-2		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 9-10, 1962—continued								
						6-9-62		
						1602	.0160	.6775
						1642	.0100	.6859
						1742	.0056	.6913
						1902	.0031	.6969
						2102	.0017	.7015
						2400	.0009	.7045
						6-10-62		
						0900	.0005	.7106
						1700	<u>1/</u> .0003	.7140

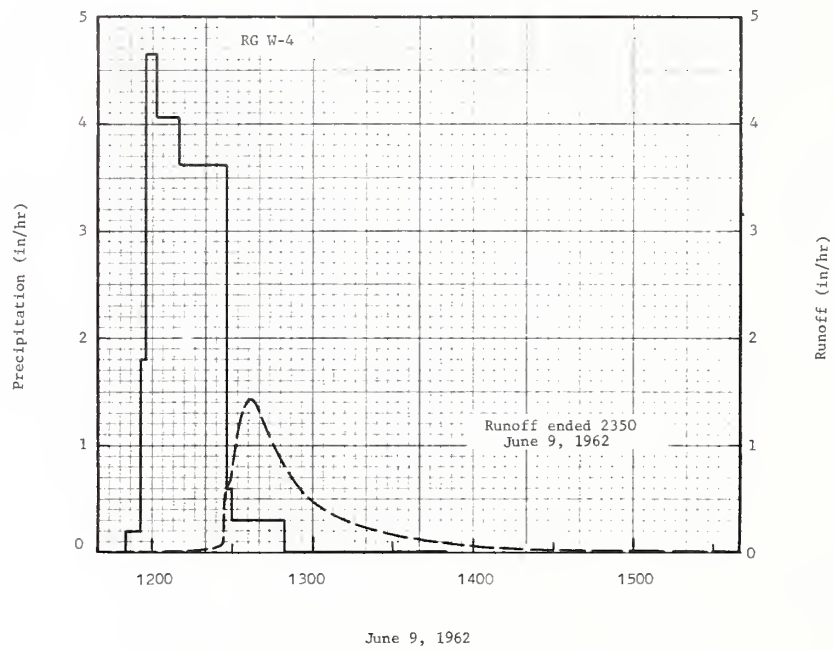
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 131.04. 1/ SLOWLY DECREASING FLOW AFTER 1700.



RIESEL (WACO), TEXAS WATERSHED W-2

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED W-6 AREA—42.3 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.27 .01	1.51 .02	.94 .03	3.68 .12	2.26 .01	5.98 .82	.19 T	.04 .00	2.61 .00	3.70 .00	4.03 .01	1.37 .00	27.58 1.02			
STA AV 2/ P (39-62) Q	2.06 .34	2.69 .41	2.20 .31	4.02 .71	4.03 .79	3.84 .52	1.57 .08	1.74 .00	2.42 .12	2.87 .14	2.89 .35	2.50 .42	32.83 4.19			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED W-6								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	1.42	6-9	.65	6-9	.73	6-9	.75	6-9	.75	6-9	.75	6-9	.75	6-5	.80
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	6-10 1941	3.99	4-19 1957	2.33	4-19 1957	2.78	5-11 1957	3.13	5-11 1957	3.21	5-11 1957	3.23	11-22 1940	5.09	4-19 1957	9.06
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1956. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began May 1939. Watershed discontinued from June 30, 1943, to Jan. 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1939 occurred after May 1, and those for 1943 before July 1; no maximums taken for 1944 and 1945.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED W-6								
Antecedent conditions			Rainfall					Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-9,14-62	3 RG 5/ .00	.002	6-9-62	RG W-4	.00	6-9-62										
5-16	.04	.000	1150	.00	.00	1158	T	.000								
5-28	.93	T	1156	.20	.02	1201	.0001	T								
5-29	1.29	.002	1158	1.80	.08	1205	.0006	T								
6-1	1.18	T	1202	4.65	.39	1210	.0016	T								
6-2	.00	T	1210	4.05	.93	1214	.0051	T								
6-3	.04	T	1228	3.63	2.02	1216	.0104	.001								
6-4	.21	T	1230	.60	2.04	1219	.0201	.001								
6-5,6	.00	T	1250	.30	2.14	1223	.0492	.004								
6-7	.36	T	1350	.01	2.15	1227	.0966	.008								
6-8	.34	T				1228	.570	.014								
6-9	.00	6/ T	RG	W-2	2.07	1230	.768	.037								
			RG	W-5A	1.96	1232	1.06	.067								
			3 RG	AVG 5/	2.06	1234	1.29	.106								
Watershed conditions: 25% of area in									1235	1.38	.129					
oats-clover, oats windrowed May 24,									1236	1.41	.152					
clover growing, dense growth, 8 in.									1237	1.41	.175					
high. 41% in grain sorghum in boot									1239	1.38	.222					
stage, 12 in. high. 16% in bermuda-									1241	1.30	.267					
grass pasture, moderately grazed. 2%									1244	1.09	.327					
in native grass meadow, dense growth,									1247	.934	.377					
12 in. high. 9% in Johnsongrass,									1251	.768	.433					
dense growth, 18 in. high. 7% in									1255	.612	.479					
gravel roads. Cropland unterraced,									1301	.456	.533					
contour-tilled.									1307	.357	.574					
									1315	.266	.615					
									1325	.190	.653					
									1335	.130	.679					
									1345	.0900	.697					
									1405	.0500	.720					
									1423	.0249	.731					
									1458	.0107	.741					
									1528	.0057	.745					
									1613	.0026	.748					
									1713	.0012	.750					
									1813	.0005	.751					
									1958	.0002	.751					
									2350	.0000	.751					
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 42.64. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.7-5. 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS SHOWN FOR EVENT. 6/ RUNOFF PRIOR TO 1158.																

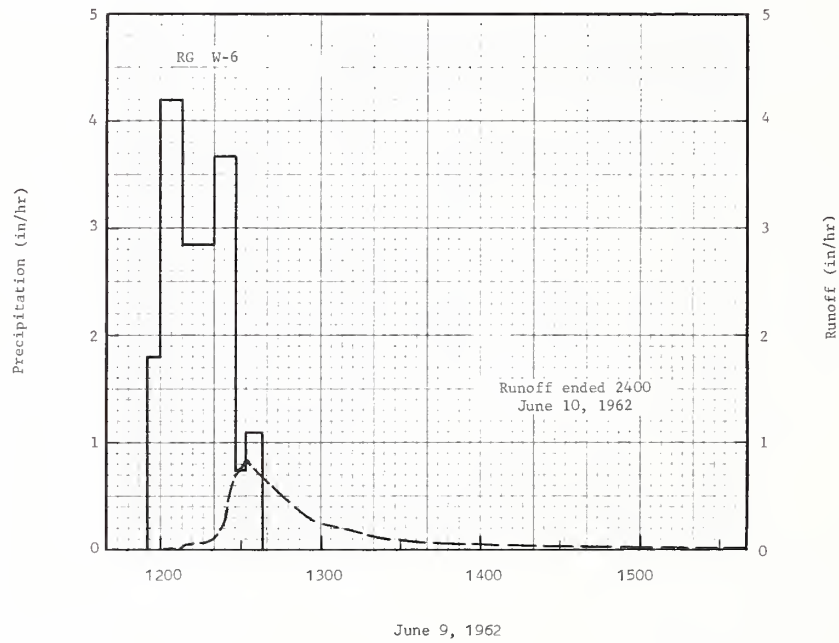
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RIESEL (WACO), TEXAS WATERSHED W-6

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED W-10 AREA—19.7 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.25 .01	1.84 .03	1.04 .02	3.80 .25	2.10 T	5.33 .55	.12 .00	.03 .00	3.31 .00	3.64 T	4.16 T	1.44 .00	28.06 .86			
STA AV. 2/ P (38-62) Q	2.08 .48	2.74 .47	2.05 .29	3.92 .83	3.88 .82	3.75 .64	1.55 .08	1.79 .02	2.32 .22	2.90 .30	2.81 .47	2.49 .48	32.28 5.10			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED W-10								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.82	6-9	.40	6-9	.46	6-9	.51	6-9	.52	6-9	.52	6-9	.52	6-7	.55
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	6-10 1941	5.01	4-19 1957	2.31	4-19 1957	2.55	5-11 1957	3.00	11-22 1940	3.33E	11-22 1940	3.53E	11-22 1940	4.94E	5-19 1957	8.29
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since Sept. 1957. 1/ Precipitation obtained from rain gage W-6. 2/ Precipitation and runoff records began Aug. 1938. Watershed discontinued from June 30, 1943, to May 3, 1946; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July 1, and those for 1946 after May 3; no maximums taken for 1938, 1944, and 1945.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED W-10								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9-10, 1962																
5-16-62	RG W-6 .03	.000	6-9-62	RG W-6 .00	.00	6-9-62	.0000	.000								
5-28	.89	T	1155	.00	.00	1200	.0005	T								
5-29	1.18	.002	1200	1.80	.15	1203	.0041	T								
6-1	1.19	.006	1208	4.20	.71	1205	.0245	.001								
6-2	.00	.001	1220	2.85	1.28	1208	.0433	.002								
6-3	.03	.001	1228	3.68	1.77	1210	.0433	.002								
6-4	.17	T	1232	.75	1.82	1211	.0648	.006								
6-5	.00	T	1238	1.10	1.93	1215	.0904	.011								
6-7	.36	T				1219	.164	.017								
6-8	.31	T				1222	.288	.024								
						1224	.522	.038								
						1226	.689	.058								
						1228	.752	.082								
						1230	.790	.095								
						1231	.824	.108								
						1232	.821	.122								
						1233	.767	.149								
						1235	.672	.197								
						1239	.581	.238								
						1243	.483	.274								
						1247	.378	.310								
						1252	.279	.342								
						1258	.208	.371								
						1305	.140	.400								
						1315	.105	.416								
						1323	.0685	.440								
						1340	.0525	.453								
						1353	.0415	.470								
						1414	.0219	.487								
						1449	.0107	.498								
						1529	.0058	.506								
						1629	.0025	.512								
						1759	.0018	.514								
						1859	.0018	.515								
						1935	.0005	.520								
						2400	.0002	.523								
						6-10-62	.0000	.524								
						0945	T	.524								
						1845		.524								
						2400		.524								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.86. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.7-5.																

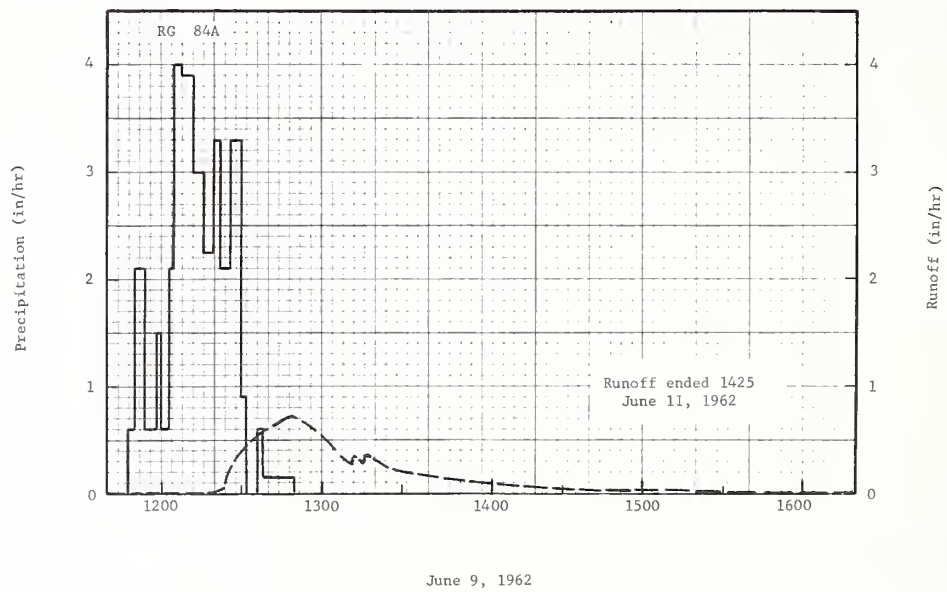
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RIESEL (WACO), TEXAS WATERSHED W-10

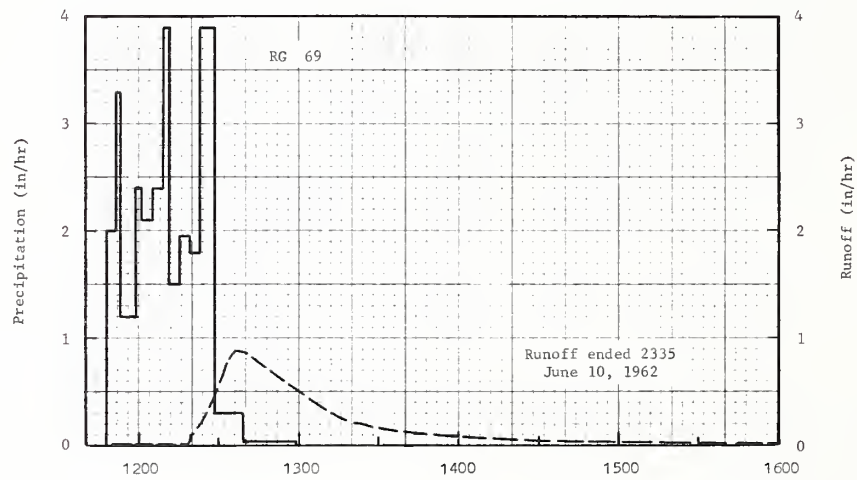
MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y AREA—309 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.30 .03	1.47 .04	1.04 .03	3.87 .18	2.34 .02	5.36 .77	.18 T	.06 .00	2.25 .00	3.50 .00	3.95 .03	1.27 T	26.59 1.10			
STA AV 2/ P (37-62) Q	2.21 .52	2.65 .50	2.10 .30	3.89 .76	3.89 .67	3.85 .55	1.56 .09	1.63 .00	2.19 .12	2.70 .12	2.67 .37	2.43 .42	31.77 4.42			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.71	6-9	.44	6-9	.58	6-9	.69	6-9	.70	6-9	.71	6-9	.71	6-8	.74
MAXIMUMS FOR PERIOD OF RECORD																
1937 to 1962 4/	4-19 1957	2.54E	4-19 1957	2.15E	4-19 1957	2.74E	4-19 1957	3.48E	4-19 1957	3.66E	4-19 1957	3.70E	11-22 1940	4.77	4-19 1957	9.36E
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservative practices since 1955. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began May 1937. Watershed discontinued from June 30, 1943, to May 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July and those for 1946 occurred after May 1; no maximums taken for 1937, 1944, and 1945.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)		Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)							
7 RG 5/				Event of June 9-11, 1962												
5-9,10-62	.00		T	6-9-62	RG 69B		6-9-62									
5-16	.03		.0000	1149	.00	.00	1155	T	.0000							
5-28	.97		T	1155	1.60	.16	1205	.0003	.0000 T							
5-29	1.32		.0201	1159	.60	.20	1210	.0041	.0002							
5-30,31	.00		T	1201	.90	.23	1216	.0172	.0012							
6-1	1.07		.0083	1205	3.00	.43	1221	.0367	.0033							
6-2	.00		.0132	1215	3.42	1.00	1224	.0667	.0057							
6-3	T		.0006	1223	2.18	1.29	1226	.239	.0106							
6-4	.22		.0012	1225	.60	1.31	1230	.379	.0318							
6-5,6	.00		.0004	1229	3.60	1.55	1234	.477	.0603							
6-7	.37		.0003	1235	.90	1.64	1237	.562	.0868							
6-8	.39		.0027	1305	.04	1.66	1241	.604	.1260							
6-9	.00		6/ .0002				1245	.587	.1687							
				6-9-62	RG 84A		1249	.711	.2152							
				1147	.00	.00	1254	.674	.2730							
Watershed conditions: 16% of area in cotton in early fruiting stage, cultivated third week of May. 6% in corn in tassel stage. 28% in oats-clover, oats windrowed by mid-May, clover growing, dense growth, 8 in. high. 13% in grain sorghum in boot stage, 12 in. high. 36% in bermudagrass and native grass pasture, good growth, moderately grazed. 1% in farmsteads and gravel roads. All cropland terraced and contour-filled.				1150	.60	.03	1256	.636	.2948							
				1154	2.10	.17	1300	.543	.3333							
				1158	.60	.21	1303	.469	.3586							
				1200	1.50	.26	1307	.353	.3858							
				1203	.60	.29	1311	.270	.4062							
				1205	2.10	.36	1312	.370	.4116							
				1208	4.00	.56	1316	.285	.4326							
				1212	3.90	.82	1317	.341	.4379							
				1216	3.00	1.02	1323	.271	.4675							
				1220	2.25	1.17	1333	.204	.5066							
				1222	3.30	1.28	1345	.154	.5420							
				1226	2.10	1.42	1409	.0729	.6027							
				1230	3.30	1.64	1509	.0343	.6443							
				1232	.90	1.67	1619	.0161	.6722							
				1236	.00	1.67	1719	.0088	.6844							
				1238	.60	1.69	1849	.0041	.6936							
				1250	.15	1.72	2029	.0021	.6984							
							2400	.0011	.7037							
				RG	69	1.64	6-10-62									
				RG	70	1.68	0720	.0005	.7091							
				RG	75A	2.00	1700	.0002	.7125							
				RG	89	2.10	2400	.0001	.7137							
				RG	W-2A	2.07	6-11-62									
				7 RG	AVG 5/	1.84	1425	.0000	.7149							
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 311.57. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED).																
5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT. 6/ RUNOFF PRIOR TO 1155.																

Cooperative Research Project of USDA and Texas Agricultural Experiment Station



RIESEL (WACO), TEXAS WATERSHED Y

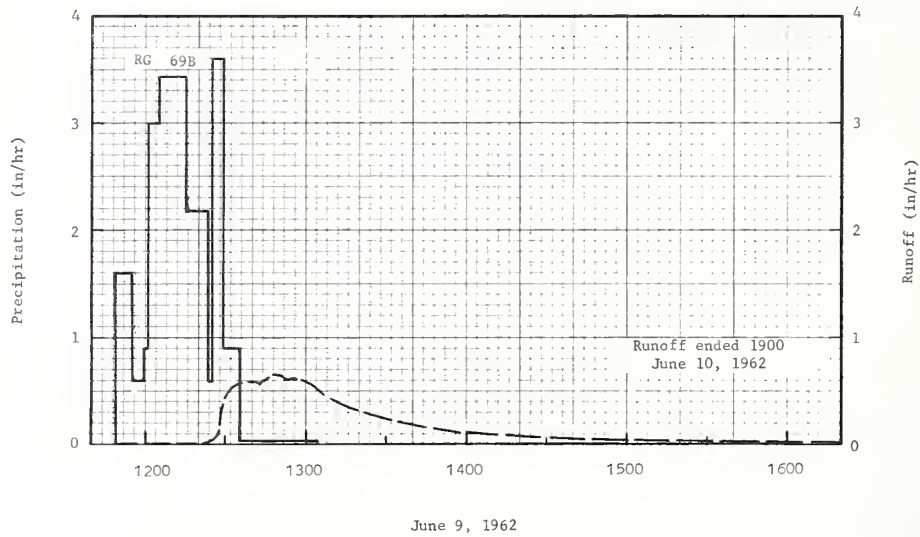
MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-2 AREA—132 ACRES								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1962	P 1/ Q	1.29 .01	1.48 .02	1.06 .02	3.73 .19	2.38 .02	5.31 .76	.17 .00	.06 .00	2.15 .00	3.38 .00	3.91 .00	1.24 .00	26.16 1.02		
STA AV 2/ (39-62)	P Q	2.21 .46	2.62 .59	2.45 .56	3.96 .93	4.55 1.15	3.68 .55	1.63 .08	1.72 .00	2.36 .13	2.66 .15	2.90 .38	2.62 .52	33.36 5.50		
MEAN P 3/ 74 YR		2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-2								
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	
1962		6-9	.90	6-9	.53	6-9	.65	6-9	.72	6-9	.73	6-9	.73	6-8	.75	
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	5-1 1944	4.07	5-1 1944	3.11	5-1 1944	5.47	5-1 1944	7.08	5-1 1944	7.28	5-1 1944	7.46	4-30 1944	9.64	4-29 1944	10.60
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Thiessen weighted, using same rain gages as shown for event. 2/ Precipitation and runoff records began Jan. 1, 1939. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-2								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)		Date and time	Intensity (in/hr)	Acc. (inches)		Date and time	Rate (in/hr)	Acc. (inches)						
Event of June 9-10, 1962																
5-16-62	5 RG 4/ .04	.0000		5-9-62	RG 69			6-2-62								
5-28	1.01	.0000		1148	.00	.00		1148	.0000	.0000						
5-29	1.32	.0247		1151	2.00	.10		1159	.0001	T						
5-30	.00	T		1153	3.30	.21		1205	.0007	T						
6-1	1.06	.0078		1159	1.20	.33		1217	.0046	.0005						
6-2,3	.00	.0093		1201	2.40	.41		1219	.0166	.0007						
6-4	.21	.0000		1205	2.10	.55		1220	.107	.0018						
6-7	.36	.0000		1209	2.40	.71		1223	.200	.0080						
6-8	.40	.0001		1211	3.90	.84		1225	.299	.0163						
				1215	1.50	.94		1227	.377	.0273						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		1231	.518	.0606						
				1229	3.90	1.58		1233	.745	.0833						
				1239	.30	1.63		1234	.807	.0963						
				1259	.03	1.64		1237	.899	.1389						
				1219	1.95	1.07		1229	.499	.0420						
				1223	1.80	1.19		12								



June 9, 1962

RIESEL (WACO), TEXAS WATERSHED Y-2

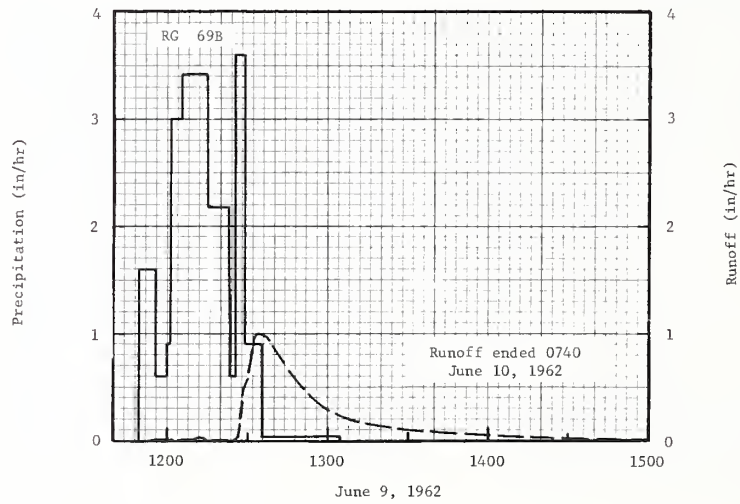
MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-4 AREA—79.9 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.29 .01	1.49 .02	1.08 .01	3.63 .24	2.42 T	5.25 .76	.16 .00	.07 .00	2.11 .00	3.28 .00	3.93 .00	1.24 .00	25.95 1.04			
STA AV 2/ P (39-62) Q	2.15 .39	2.66 .44	2.16 .31	3.86 .73	4.20 .87	3.84 .60	1.53 .09	1.69 .00	2.39 .13	2.75 .16	2.86 .39	2.40 .36	32.49 4.47			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-4								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.66	6-9	.48	6-9	.63	6-9	.71	6-9	.72	6-9	.73	6-9	.73	6-9	.75
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	6-10 1941	3.12	4-19 1957	2.16	4-19 1957	2.85	4-19 1957	3.25	4-23 1957	3.40	4-23 1957	3.43	4-23 1957	5.12	4-19 1957	9.46
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began Jan. 1, 1939. Watershed discontinued from June 30, 1943, to Jan. 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Max. for 1943 occurred before July; no max. taken for 1944 and 1945.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-4								
Antecedent conditions			Rainfall					Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
4 RG 5/			Event of June 9-10, 1962													
5-16-62	.03	.000	6-9-62	RG 69B		6-9-62										
5-28	1.05	.000	1149	.00	.00	1149	.0000	.000								
5-29	1.34	.005	1155	1.60	.16	1158	T	T								
6-1	1.04	.002	1159	.60	.20	1204	.0006	T								
6-2,3		.006	1201	.90	.23	1210	.0029									
6-4	.21	.000	1205	3.00	.43	1217	.0090	.001								
6-7	.36	.000	1215	3.42	1.00	1223	.0236	.002								
6-8	.41	.000	1223	2.18	1.29	1227	.104	.005								
			1225	.60	1.31	1229	.376	.014								
			1229	3.60	1.55	1233	.520	.044								
Watershed conditions: 8% of area in cotton in early fruiting stage, cultivated third week in May. 29% in oats-clover, oats windrowed in mid-May, clover growing, dense growth, 8 in. high. 31% in grain sorghum in boot stage, 12 in. high. 31% in bermudagrass pasture, good growth, moderately grazed. 1% in gravel roads. All cropland terraced and contour-tilled.			1235	.90	1.64	1237	.587	.082								
			1305	.04	1.66	1240	.596	.112								
						1243	.587	.141								
			RG	69	1.64	1246	.631	.172								
			RG	75A	2.00	1249	.663	.204								
			RG	84A	1.72	1254	.604	.257								
			4 RG	AVG 5/	1.71	1259	.604	.307								
						1303	.535	.345								
						1310	.423	.400								
						1320	.322	.462								
						1330	.245	.508								
						1340	.191	.545								
						1350	.143	.572								
						1400	.116	.593								
						1410	.0956	.611								
						1430	.0686	.638								
						1500	.0377	.664								
						1600	.0189	.692								
						1710	.0087	.707								
						1810	.0047	.714								
						1930	.0023	.718								
						2140	.0010	.722								
						2400	.0006	.723								
						6-10-62										
						0200	.0003	.724								
						1100	.0001	.726								
						1500		.726								
						1900	.0000	.726								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 80.54. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED). 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT.																



RIESEL (WACO), TEXAS WATERSHED Y-4

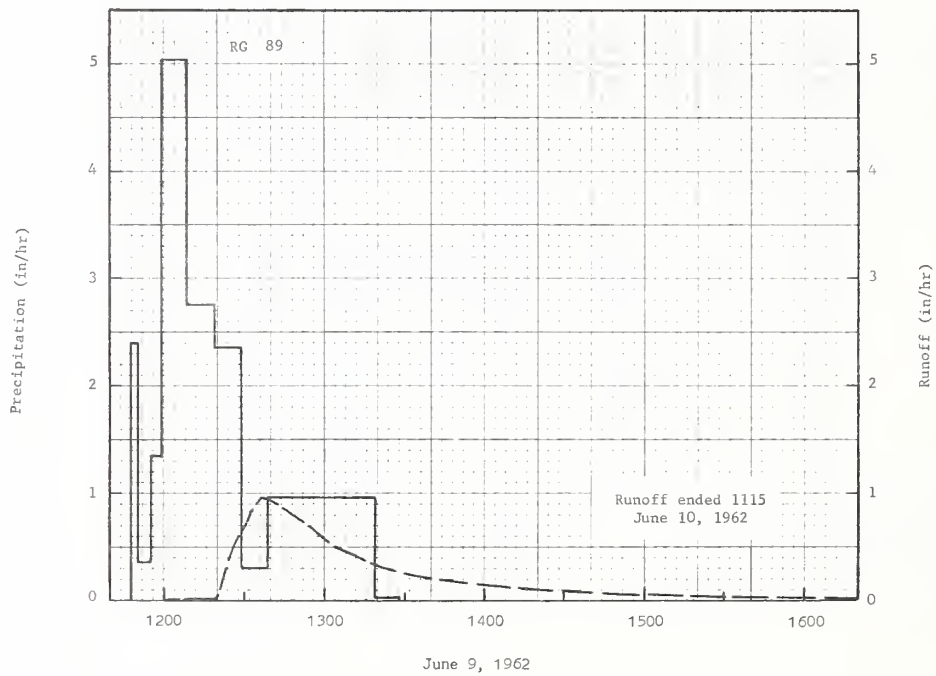
MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-6 AREA—16.3 ACRES										
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual				
1962	P 1/ Q	1.28 .00	1.51 T	1.09 .00	3.61 .31	2.40 .00	5.24 .49	.16 .00	.06 .00	2.14 .00	3.38 .00	3.90 .00	1.25 .00	26.02 .80				
STA AV 2/ (39-62)	P Q	2.03 .31	2.77 .37	1.96 .16	3.94 .72	3.91 .67	4.09 .63	1.60 .10	1.69 .00	2.31 .13	2.95 .29	2.83 .42	2.36 .36	32.44 4.16				
MEAN P 3/ 74 YR		2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13				
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-6										
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days				
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962		6-9	1.00	6-9	.42	6-9	.47	6-9	.48	6-9	.48	6-9	.49	6-9	.49	6-9	.49	
MAXIMUMS FOR PERIOD OF RECORD																		
1939 to 1962 4/	6-10 1941	3.79	6-10 1941	1.51	4-19 1957	1.99	4-23 1957	2.65	5-11 1957	2.87	5-11 1957	2.90	11-22 1940	4.87	4-19 1957	8.49		
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 93% of area in grain sorghum, 5% in Bermudagrass pasture, and 2% in gravel roads. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began Jan. 1, 1939. Watershed discontinued from June 30, 1943, to May 1, 1947; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; no maximums taken for 1944 through 1947.																		
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-6										
Antecedent conditions				Rainfall						Runoff								
Date	Rainfall (inches)	Runoff (inches)		Date and time	Intensity (in/hr)	Acc. (inches)		Date and time	Rate (in/hr)	Acc. (inches)								
				Event of June 9-10, 1962														
5-16-62	2 RG 5/ .02	.00		6-9-62	RG 69B			6-9-62										
5-28	1.05	.00		1149	.00	.00		1153	.00	.000								
5-29	1.32	.00		1155	1.60	.16		1206	T	T								
6-1	1.03	.00		1159	.60	.20		1210	.004	T								
6-4	.21	.00		1201	.90	.23		1213	.010	.001								
6-7	.36	.00		1205	3.00	.43		1216	.008	.001								
6-8	.41	.00		1215	3.42	1.00		1222	.009	.002								
				1223	2.18	1.29		1224	.008	.002								
				1225	.60	1.31		1226	.034	.003								
				1229	3.60	1.55		1227	.202	.005								
Watershed conditions: 93% of area in grain sorghum in boot stage, 12 in. high, cultivated May 7. 5% in bermuda-grass pasture, good growth, lightly grazed. 2% in gravel roads. Cropland terraced and contour-tilled. 11.33 in. available soil moisture in 0-60 in. profile on June 6.				1235	.90	1.64		1229	.506	.016								
				1305	.04	1.66		1231	.704	.036								
				RG	75A	2.00		1232	.973	.050								
				RG	AVG 5/	1.75		1233	.993	.067								
								1234	1.00	.083								
												1236	.971	.116				
												1239	.862	.162				
												1243	.710	.214				
												1247	.578	.257				
												1249	.519	.275				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.43. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED).
5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT.



RIESEL (WACO), TEXAS WATERSHED Y-6

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-7 AREA—40 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q T	1.32 T	1.44 T	1.05 T	3.95 .38	2.33 .00	5.59 .89	.17 .00	.04 .00	2.33 .00	3.70 .17	3.98 .12	1.38 .00	27.28 1.56			
STA AV 2/ (39-62) P Q	2.06 .29	2.81 .43	1.99 .26	4.01 .82	3.96 .88	4.05 .69	1.59 .09	1.71 .02	2.27 .19	3.00 .26	2.89 .49	2.42 .45	32.76 4.87			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-7								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.95	6-9	.62	6-9	.79	6-9	.87	6-9	.87	6-9	.87	6-9	.87	6-1	.99
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	6-10 1941	3.59	4-19 1957	2.34	4-19 1957	2.76	4-23 1957	3.28	4-23 1957	3.31	4-23 1957	3.31	11-22 1940	5.37	4-19 1957	8.89
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Thiessen weighted, using same rain gages as shown for event. 2/ Precipitation and runoff records began Jan. 1, 1939. Watershed discontinued from June 30, 1943, to May 1, 1947; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Max. for 1943 occurred before July; no max. taken for 1944 through 1947.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-7								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9-10, 1962																
5-16-62	2 RG 5/ .04	.000	6-9-62	RG 89		6-9-62										
5-28	.96	.000	1148	.00	.00	1200	.0000	.000								
5-29	1.33	.000	1150	2.40	.08	1208	.0025	T								
6-1	1.09	.010	1155	.36	.11	1211	.0105	T								
6-2	.00	.007	1159	1.35	.20	1220	.0236	.003								
6-3	T	.000	1209	5.04	1.04	1223	.274	.006								
6-4	.21	.000	1219	2.76	1.50	1226	.456	.025								
6-7	.39	.000	1229	2.34	1.89	1229	.645	.053								
6-8	.37	.000	1239	.30	1.94	1231	.720	.076								
			1319	.96	2.10	1233	.811	.101								
			1329	.03	2.11	1235	.925	.130								
			RG	W-2A	2.08	1237	.953	.161								
			RG	AVG 5/	2.11	1241	.934	.224								
						1246	.863	.299								
						1250	.782	.354								
						1254	.690	.403								
						1302	.532	.484								
						1311	.416	.555								
						1317	.351	.593								
						1328	.273	.650								
						1340	.207	.698								
						1346	.180	.717								
						1358	.140	.749								
						1411	.106	.776								
						1432	.0756	.807								
						1454	.0426	.828								
						1518	.0259	.841								
						1558	.0134	.854								
						1638	.0068	.860								
						1745	.0030	.865								
						1855	.0014	.868								
						2100	.0005	.870								
						2400	.0002	.871								
						6-10-62										
						0150	.0001	.871								
						1115	.0000	.871								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 40.32. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED). 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT.																

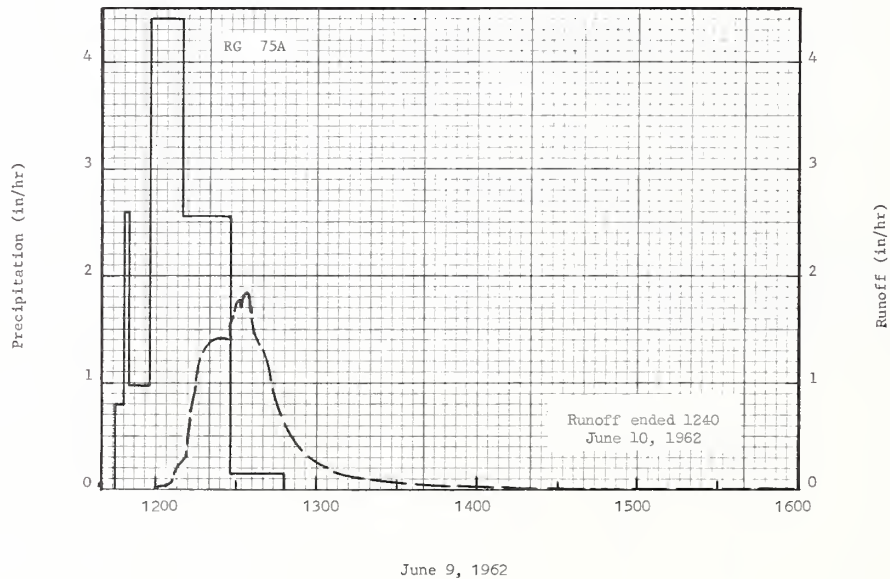


RIESEL (WACO), TEXAS WATERSHED Y-7

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-8 AREA — 20.8 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q T	1.29 T	1.47 T	1.02 T	3.83 .38	2.29 .13	5.45 1.08	.19 .00	.03 .00	2.18 .00	3.57 .00	3.80 .01	1.22 .00	26.34 1.65			
STA AV 2/ P Q	1.90 .34	2.79 .43	2.05 .21	4.03 .81	3.79 .72	4.30 .64	1.69 .09	1.67 .00	2.41 .16	3.14 .18	2.94 .49	2.47 .41	33.18 4.48			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-8								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	1.86	6-9	.90	6-9	.96	6-9	.99	6-9	.99	6-9	.99	6-8	.99	6-1	1.06
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	6-10 1941	3.29	4-19 1957	2.41	4-19 1957	2.80	4-23 1957	3.32	4-23 1957	3.37	4-23 1957	3.37	11-22 1940	5.64	4-19 1957	9.10
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 95% of area in cotton; 4% in Bermudagrass pasture; and 1% in gravel roads. 1/ Precipitation obtained from rain gage 75A. 2/ Precipitation and runoff records began Mar. 1, 1939. Watershed discontinued from June 30, 1943, to Jan. 1, 1949; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1939 occurred after Mar. 1, and those for 1943 occurred before July; no maximums taken for 1944 through 1948.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-8								
Antecedent conditions				Rainfall					Runoff							
Date	Rainfall (inches)		Runoff (inches)	Date and time	Intensity (in/hr)		Acc. (inches)	Date and time	Rate (in/hr)		Acc. (inches)					
	RG 75A			Event of June 9-10, 1962.												
5-16	.04		.000	6-9-62	RG 75A			6-9-62								
5-28	.95		.000	1145	.00		.00	1200	.0000		.000					
5-29	1.30		.177	1148	.80		.04	1203	.0304		.001					
6-1	1.08		.068	1150	2.60		.17	1206	.0687		.003					
6-2	.00		.003	1158	.98		.30	1207	.144		.005					
6-4	.21		.000	1210	4.40		1.18	1209	.232		.011					
6-7	.36		.000	1228	2.56		1.95	1211	.292		.020					
6-8	.37		.002	1248	.15		2.00	1213	.699		.034					
								1215	1.01		.064					
								1217	1.20		.100					
								1219	1.34		.143					
								1223	1.40		.235					
								1225	1.43		.282					
								1227	1.41		.329					
								1229	1.59		.379					
								1230	1.72		.407					
								1231	1.77		.436					
								1232	1.69		.465					
								1234	1.86		.524					
								1235	1.74		.554					
								1237	1.44		.607					
								1240	1.28		.674					
								1242	1.17		.715					
								1243	.952		.733					
								1246	.762		.776					
								1250	.545		.819					
								1254	.397		.850					
								1258	.293		.873					
								1302	.226		.890					
								1309	.145		.912					
								1317	.0949		.927					
								1332	.0554		.946					
								1347	.0354		.957					
								1411	.0193		.968					
								1451	.0097		.978					
Watershed conditions: 95% of area in cotton in early fruiting stage, cultivated May 14. 4% in bermudagrass pasture, good growth, lightly grazed. 1% in gravel roads. Cropland terraced and contour-tilled. 11.02 in. available soil moisture in 0-60 in. profile on June 6.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 20.97. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED).																

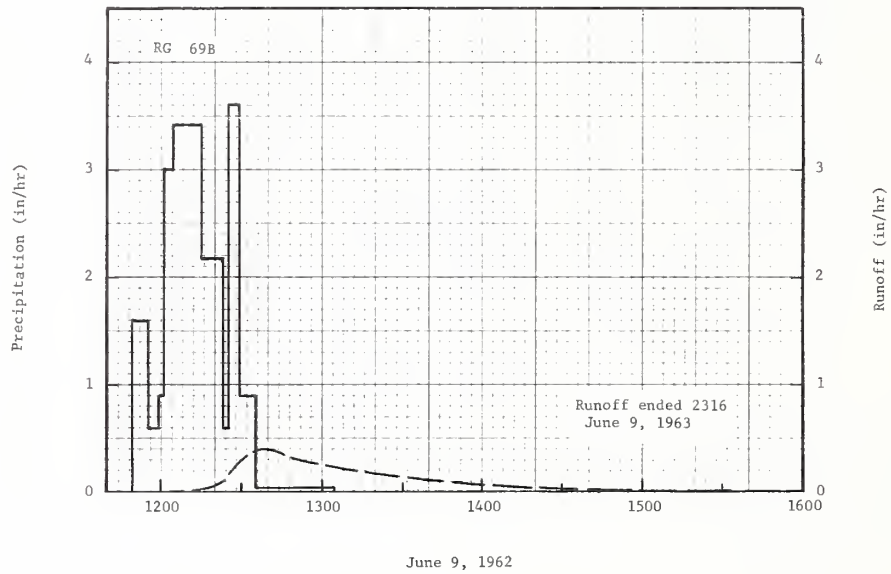
1962 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS WATERSHED Y-8	
Antecedent conditions			Rainfall			Runoff	
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr) Acc. (inches)
<u>Event of June 9-10, 1962—continued</u>							
						6-9-62	
						1541	.0043 .983
						1631	.0018 .985
						1801	.0005 .987
						1901	.0003 .987
						2400	.0001 .988
						6-10-62	
						1240	.0000 .989

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 20.97.



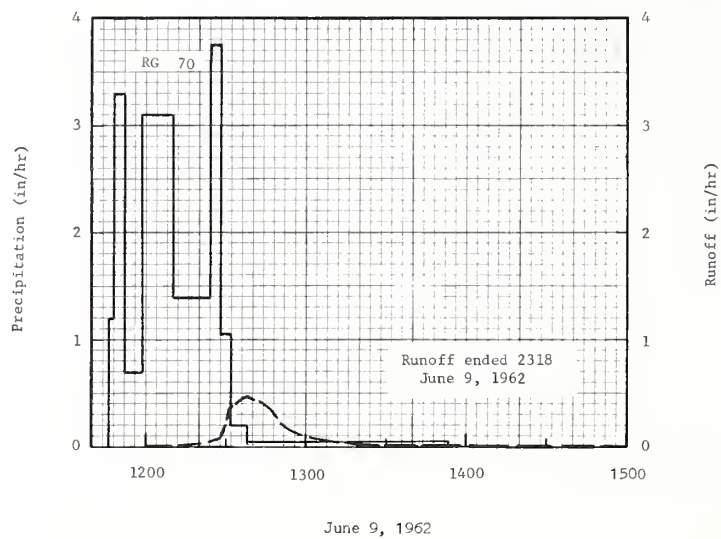
RIESEL (WACO), TEXAS WATERSHED Y-8

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED Y-10 AREA—18.6 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.29 .01	1.50 .01	1.09 .01	3.57 .02	2.45 .00	5.21 .41	.15 .00	.08 .00	2.09 .00	3.23 .00	3.95 .00	1.25 .00	25.86 .46			
STA AV 2/ P (38-62) Q	2.11 .39	2.64 .38	2.04 .26	3.93 .85	3.95 .79	3.93 .65	1.53 .10	1.69 .01	2.31 .22	2.81 .23	2.77 .38	2.39 .38	32.10 4.64			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED Y-10								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.39	6-9	.28	6-9	.37	6-9	.40	6-9	.40	6-9	.40	6-9	.40	6-9	.41
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	4-19 1957	3.73	4-19 1957	2.90	4-19 1957	3.48	4-19 1957	3.62	4-19 1957	3.86	4-19 1957	3.91	4-23 1957	5.34	4-19 1957	10.57
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 93% in oats-clover; 4% in Bermudagrass pasture; and 3% in gravel roads. 1/ Thiessen weighted, using same rain gages as those shown for event. 2/ Precipitation and runoff records began July 1, 1938. Watershed discontinued from June 30, 1943, to May 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; maximums for 1946 occurred after May 1; no maximums taken for 1938, 1944, and 1945.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED Y-10								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-16-62	2 RG 5/ .03	.00	6-9-62	RG 69B		6-9-62										
5-28	1.08	.00	11 49	.00	.00	1158	.000	.000								
5-29	1.34	.00	1155	1.60	.16	1206	.002	.000								
6-1	1.03	.00	1159	.60	.20	1209	.012	.000								
6-4	.21	.00	1201	.90	.23	1213	.023	.002								
6-7	.36	.00	1205	3.00	.43	1217	.036	.004								
6-8	.42	.00	1215	3.42	1.00	1220	.064	.006								
			1223	2.18	1.29	1223	.104	.010								
			1225	.60	1.31	1225	.148	.014								
			1229	3.60	1.55	1227	.212	.020								
Watershed conditions: 93% of area in oats-clover, oats windrowed May 22, clover growing, dense cover, 8 in. high. 4% in bermudagrass pasture, good growth, lightly grazed. 3% in gravel roads. Cropland terraced. 8.24 in. available soil moisture in 0-60 in. profile on May 31.																
			1235	.90	1.64	1229	.262	.028								
			1305	.04	1.66	1231	.321	.038								
						1234	.376	.055								
			RG	69	1.64	1236	.394	.068								
			2 RG	AVG 5/	1.66	1243	.393	.114								
						1246	.357	.133								
						1251	.310	.160								
						1301	.265	.208								
						1311	.217	.248								
						1321	.172	.281								
						1331	.136	.306								
						1341	.109	.327								
						1351	.087	.343								
						1411	.050	.366								
						1431	.030	.379								
						1451	.018	.387								
						1521	.008	.393								
						1551	.004	.396								
						1641	.002	.399								
						2316	.000	.401								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 18.75. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.11-5 (REPRINTED). 5/ THIESSEN WEIGHTED, USING SAME RAIN GAGES AS THOSE SHOWN FOR EVENT.																



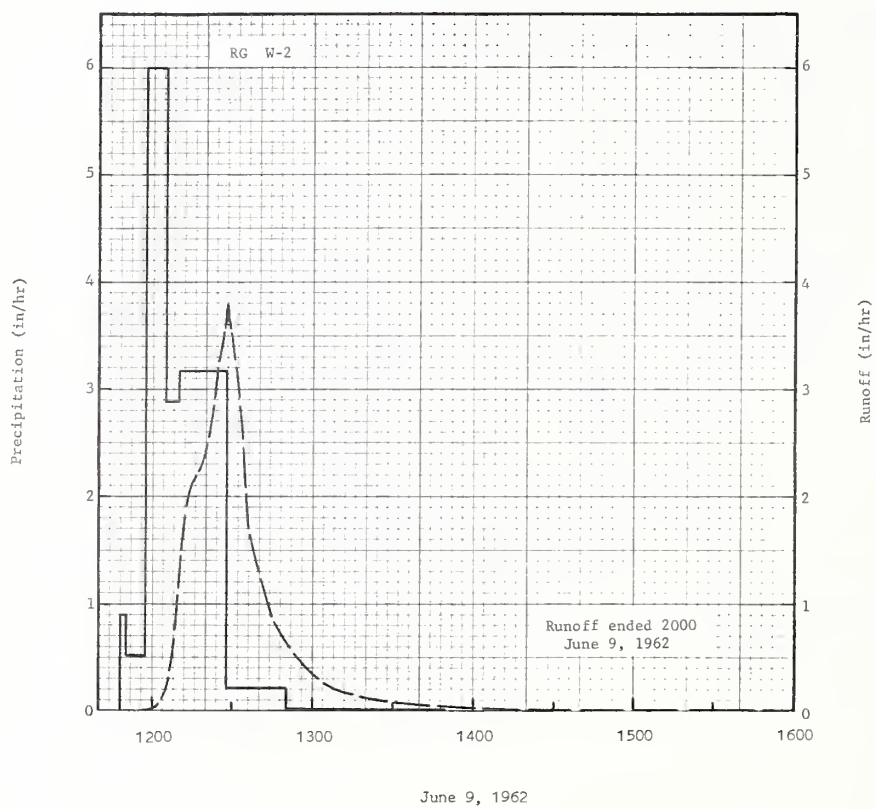
RIESEL (WACO), TEXAS WATERSHED Y-10

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED SW-12 AREA—2.97 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.31 .00	1.45 .00	1.06 .00	3.89 .16	2.40 .00	5.34 .21	.19 .00	.07 .00	2.20 .00	3.21 .00	3.38 .01	1.21 .00	26.31 .38			
STA AV 2/ P (38-62) Q	2.10 .42	2.71 .50	1.99 .15	3.94 .53	3.88 .43	4.04 .31	1.58 .00	1.62 .00	2.29 .05	2.79 .01	2.72 .20	2.33 .32	31.99 2.92			
MEAN P 3/ P 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED SW-12								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	.47	6-9	.18	6-9	.19	6-9	.20	6-9	.20	6-9	.20	6-8	.20	6-8	.21
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	6-10 1941	3.48	4-19 1957	2.42	4-19 1957	2.76E	4-23 1957	3.29E	4-23 1957	3.34E	4-23 1957	3.34E	4-23 1957	4.61E	4-19 1957	8.53E
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Precipitation obtained from rain gage 70. 2/ Precipitation and runoff records began Jan. 1, 1938. Watershed discontinued from June 30, 1943, to June 1, 1947; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; no maximums taken for 1944 through 1947.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED SW-12								
Antecedent conditions				Rainfall						Runoff						
Date	Rainfall (inches)		Runoff (inches)		Date and time	Intensity (in/hr)		Acc. (inches)		Date and time	Rate (in/hr)		Acc. (inches)			
				Event of June 9, 1962												
5-16-62	RG 70 .05		.00		6-9-62	RG 70 .00		.00		6-9-62						
5-28	1.00		.00		1146	.00		.00		1201	.0000		.00			
5-29	1.35		.00		1148	1.20		.04		1203	.0030		T			
6-1	1.06		T		1152	3.30		.26		1205	.0065		T			
6-2	.00		T		1158	.70		.33		1209	.0147		T			
6-4	.26		.00		1210	3.10		.95		1215	.0187		T			
6-7	.36		.00		1224	1.39		1.34		1221	.0252		T			
6-8	.42		T		1228	3.75		1.59		1223	.0434		.01			
					1232	1.05		1.66		1225	.0565		.01			
					1238	.20		1.68		1228	.0856		.01			
Watershed conditions: 100% native grass meadow, good cover, grass 15 in. high. 6.59 in. available soil moisture in the 0-60 in. profile on May 31.					1354	.04		1.73		1230	.199		.02			
										1232	.336		.02			
										1235	.432		.04			
										1238	.468		.07			
										1241	.456		.09			
										1245	.382		.12			
										1249	.273		.14			
										1253	.190		.15			
										1257	.129		.16			
										1301	.0877		.17			
										1309	.0470		.18			
										1316	.0275		.18			
										1328	.0130		.19			
										1335	.0085		.19			
										1403	.0035		.19			
										1448	.0009		.19			
										1800	.0004		.20			
										2318	.0000		.20			
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.994. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.24-4.																



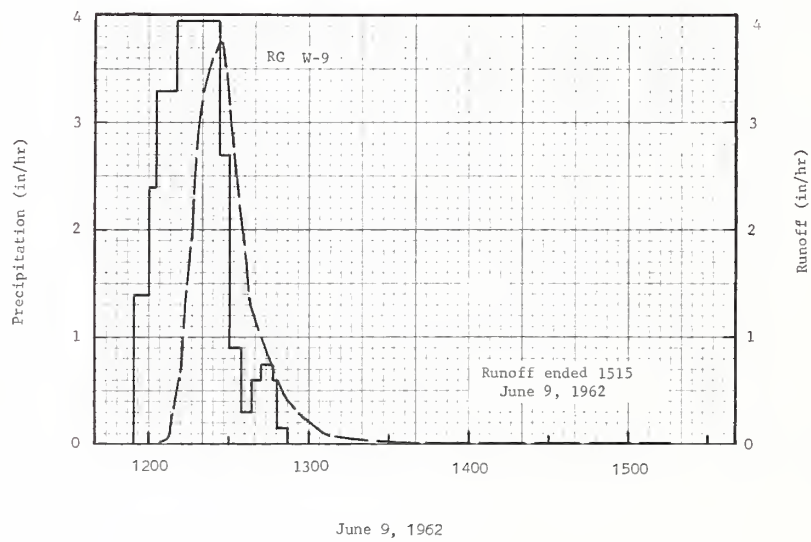
RIESEL (WACO), TEXAS WATERSHED SW-12

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED SW-17 AREA — 2.99 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.36 .04	1.52 .01	.99 .01	3.72 .12	2.33 T	5.94 1.90	.16 .00	.02 .00	2.59 .00	3.90 .01	3.92 .02	1.42 .00	27.87 2.11			
STA AV 2/ P (39-62) Q	1.95 .40	2.82 .60	2.00 .34	4.13 .98	3.86 .74	4.06 .82	1.70 .14	1.70 .00	2.46 .25	3.15 .23	2.94 .57	2.49 .58	33.26 5.65			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED SW-17								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	3.79	6-9	1.55	6-9	1.65	6-9	1.67	6-9	1.67	6-9	1.67	6-9	1.67	6-7	1.86
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	10-31 1940	7.06	4-19 1957	2.54	4-19 1957	2.96	4-23 1957	3.31	4-23 1957	3.35	11-22 1940	3.91	11-22 1940	5.37	4-19 1957	9.42
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: No appreciable change in land use or conservation practices since 1955. 1/ Precipitation obtained from rain gage W-2. 2/ Precipitation and runoff records began Feb. 1, 1939. Watershed discontinued June 30, 1943, to Jan. 1 1948; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1939 occurred after Feb.; maximums for 1943 occurred before July; no maximums taken for 1944 through 1947.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED SW-17								
Antecedent conditions			Rainfall					Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-16-62	RC W-2 .03	.00	6-9-62	RC W-2		6-9-62										
5-28	.93	.00	1148	.00	.00	1155	.0000	.00								
5-29	1.29	T	1150	.90	.03	1158	.0007	T								
6-1	1.11	.03	1158	.52	.10	1200	.0022	T								
6-2	.00	T	1202	6.00	.50	1202	.0285	T								
6-3	.06	.00	1205	6.00	.80	1203	.0769	T								
6-4	.22	.00	1210	2.88	1.04	1204	.144	T								
6-7	.37	T	1228	3.17	1.99	1206	.334	.01								
6-8	.36	.00	1250	.22	2.07	1208	.737	.03								
			1350	.01	2.08	1210	1.19	.06								
Watershed conditions: 100% bermuda-grass pasture, good cover, grass 4 in. high. 7.08 in. available soil moisture in 0-60 in. profile on May 31.							1212	1.75	.11							
						1215	2.13	.21								
						1220	2.41	.40								
						1222	2.62	.48								
						1224	3.14	.58								
						1227	3.59	.75								
						1228	3.79	.81								
						1230	3.39	.93								
						1232	2.97	1.03								
						1234	2.27	1.12								
						1236	1.78	1.18								
						1238	1.50	1.24								
						1242	1.19	1.33								
						1245	.880	1.38								
						1250	.673	1.45								
						1256	.464	1.50								
						1303	.298	1.54								
						1315	.166	1.59								
						1330	.0860	1.62								
						1345	.0518	1.64								
						1400	.0339	1.65								
						1430	.0181	1.66								
						1500	.0077	1.67								
						1545	.0024	1.67								
						1630	.0007	1.67								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.014. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.28-5.							1700	.0004	1.67							
							2000	.0000	1.67							



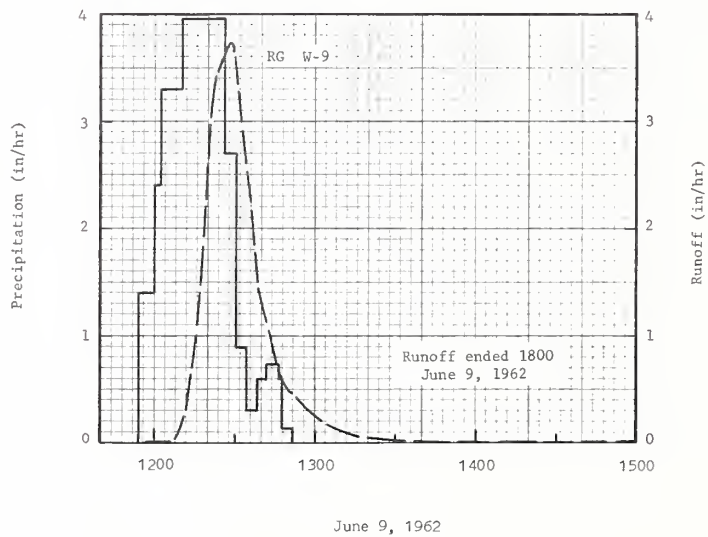
RIESEL (WACO), TEXAS WATERSHED SW-17

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED P-1 AREA—0.243 ACRE								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.20 .00	1.91 .13	1.11 .08	3.65 .58	2.02 .00	5.39 1.46	.24 .00	.04 .00	2.98 .00	2.65 .00	4.20 .02	1.56 .00	26.95 2.27			
STA AV 2/ P (38-62) Q	2.65 .61	3.11 .65	1.79 .15	3.32 .20	3.10 .30	5.61 1.08	1.64 .05	1.41 .00	2.45 .17	3.05 .01	3.50 .57	3.22 .47	34.85 4.26			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED P-1								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	3.76	6-9	1.43	6-9	1.46	6-9	1.46	6-9	1.46	6-9	1.46	6-9	1.46	6-9	1.46
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	6-10 1941	7.18	11-22 1940	2.04	11-22 1940	2.20	11-22 1940	2.30	11-22 1940	2.33	11-22 1940	2.66	11-22 1940	4.23	11-22 1940	4.39
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 100% Bermudagrass pasture. 1/ Precipitation obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938. Watershed discontinued from June 30, 1943, to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1963 occurred before July; no maximums taken for 1944 through 1959.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED P-1								
Antecedent conditions			Rainfall					Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
	RG W-9			RG W-9												
5-16-62	.03	.00	6-9-62			6-9-62										
5-28	.78	.00	1154	.00	.00	1203	.0000	.00								
5-29	1.21	.00	1200	1.40	.14	1205	.0174	T								
6-1	1.21	.00	1202	2.40	.22	1207	.0671	T								
6-3	.04	.00	1210	3.30	.66	1208	.147	T								
6-4	.21	.00	1226	3.94	1.71	1210	.473	.01								
6-7	.36	.00	1230	2.70	1.89	1212	.741	.03								
6-8	.35	.00	1234	.90	1.95	1214	1.34	.07								
			1238	.30	1.97	1216	1.95	.12								
			1242	.60	2.01	1218	2.76	.20								
Watershed conditions: 100% bermuda-grass pasture, good cover, conventional grazing, grazed from May 7 to date. 3.583 in. available soil moisture in 0-60 in. profile on May 31.																
			1246	.75	2.06	1221	3.26	.35								
			1248	.60	2.08	1226	3.76	.64								
			1252	.15	2.09	1227	3.76	.71								
						1230	3.26	.88								
						1232	2.77	.98								
						1234	2.22	1.07								
						1236	1.72	1.13								
						1238	1.36	1.18								
						1241	1.10	1.24								
						1247	.660	1.33								
						1251	.452	1.37								
						1257	.271	1.40								
						1303	.153	1.42								
						1309	.0881	1.44								
						1319	.0419	1.45								
						1326	.0289	1.45								
						1335	.0101	1.45								
						1350	.0039	1.46								
						1411	.0009	1.46								
						1515	.0000	1.46								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-4.																



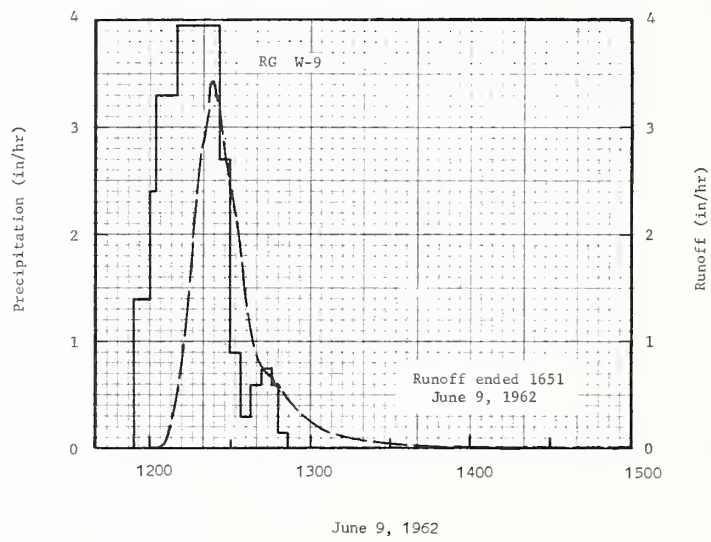
RIESEL (WACO), TEXAS WATERSHED P-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								RIESEL (WACO), TEXAS WATERSHED P-2								
								AREA—0.243 ACRE								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.20 .00	1.91 .09	1.11 .04	3.65 .54	2.02 .00	5.39 1.43	.24 .00	.04 .00	2.98 .00	2.65 .00	4.20 .00	1.56 .00	26.95 2.10			
STA AV 2/ P (38-62) Q	2.46 .75	3.11 .82	1.87 .25	3.60 .28	2.84 .26	6.08 1.57	1.81 .12	1.23 .00	2.75 .32	3.19 .07	3.64 .98	3.51 .81	36.09 6.23			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								RIESEL (WACO), TEXAS WATERSHED P-2								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	3.73	6-9	1.40	6-9	1.43	6-9	1.43	6-9	1.43	6-9	1.43	6-9	1.43	6-9	1.43
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	6-10 1941	6.65	6-10 1941	2.09	6-10 1941	2.14	11-22 1940	2.34	11-22 1940	2.45	11-22 1940	3.04	11-22 1940	5.36	11-22 1940	5.83
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed condition: 100% Bermudagrass pasture. 1/ Precipitation obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938. Record lost for May 16-20, 1939, when the only runoff of the year occurred. Watershed discontinued from June 30, 1943, to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; no maximums taken for 1939 and 1944 through 1959.																
1962 SELECTED RUNOFF EVENT								RIESEL (WACO), TEXAS WATERSHED P-2								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-16-62	RG W-9 .03	.00	6-9-62	RG W-9 .00	.00	6-9-62										
5-28	.78	.00	1154	.00	.00	1157	.0000	.00								
5-29	1.21	.00	1200	1.40	.14	1202	.0030	T								
6-1	1.21	.00	1202	2.40	.22	1207	.0214	T								
6-3	.04	.00	1210	3.30	.66	1209	.0683	T								
6-4	.21	.00	1226	3.94	1.71	1211	.269	.01								
6-7	.36	.00	1230	2.70	1.89	1213	.490	.02								
6-8	.35	.00	1234	.90	1.95	1215	.909	.04								
			1238	.30	1.97	1217	1.54	.08								
			1242	.60	2.01	1219	2.24	.15								
Watershed conditions: 100% bermuda-grass pasture, good cover, conventional grazing, grazed from May 7 to date. 4.707 in. available soil moisture in 0-60 in. profile on May 31.																
			1246	.75	2.06	1221	3.05	.23								
			1248	.60	2.08	1223	3.42	.34								
			1252	.15	2.09	1228	3.73	.64								
						1229	3.73	.70								
						1232	3.14	.87								
						1234	2.62	.97								
						1236	2.12	1.05								
						1239	1.44	1.14								
						1243	1.01	1.22								
						1247	.694	1.28								
						1252	.494	1.33								
						1256	.356	1.36								
						1301	.243	1.38								
						1308	.112	1.40								
						1317	.0592	1.41								
						1330	.0236	1.42								
						1347	.0111	1.42								
						1410	.0025	1.43								
						1437	.0025	1.43								
						1800	.0000	1.43								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-4.																



RIESEL (WACO), TEXAS WATERSHED P-2

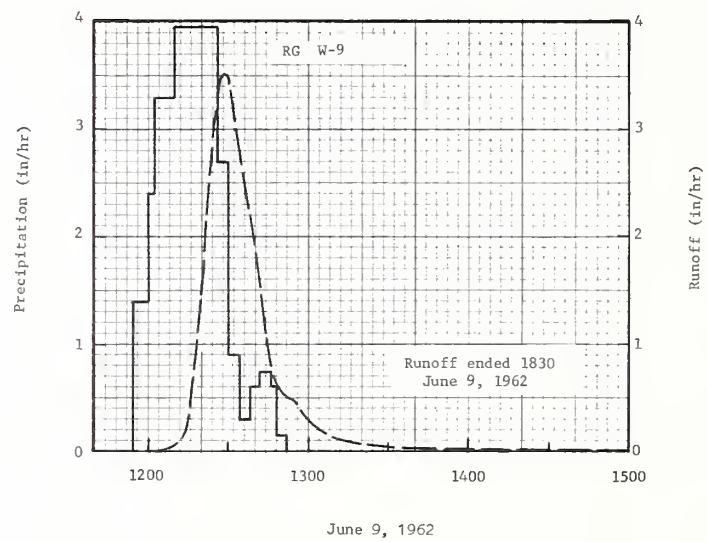
MONTHLY PRECIPITATION AND RUNOFF (Inches)									RIESEL (WACO), TEXAS WATERSHED P-3 AREA—0.243 ACRE									
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual					
1962 P 1/ Q	1.20 .00	1.91 .34	1.11 .08	3.65 .57	2.02 .00	5.39 1.34	.24 .00	.04 .00	2.98 .00	2.65 .00	4.20 .01	1.56 .00	26.95 2.34					
STA AV 2/ P Q	2.65 .70	3.11 .74	1.79 .23	3.32 .28	3.10 .44	5.61 1.37	1.64 .10	1.41 .00	2.45 .26	3.05 .13	3.50 .76	3.22 .63	34.85 5.64					
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13					
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS									RIESEL (WACO), TEXAS WATERSHED P-3									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days			
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962	6-9	3.43	6-9	1.25	6-9	1.33	6-9	1.34	6-9	1.34	6-9	1.34	6-9	1.34	6-9	1.34		
MAXIMUMS FOR PERIOD OF RECORD																		
1938 to 1962 4/	6-10 1941	7.63	6-10 1941	2.13	6-10 1941	2.23	11-22 1940	2.32	11-22 1940	2.46	11-22 1940	3.02	11-22 1940	5.34	11-22 1940	5.93		
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 100% Bermudagrass pasture. 1/ Precipitation obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938. Watershed discontinued from June 30, 1943, to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; no maximums taken for 1944 through 1959.																		
1962 SELECTED RUNOFF EVENT									RIESEL (WACO), TEXAS WATERSHED P-3									
Antecedent conditions				Rainfall				Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)										
Event of June 9, 1962																		
5-16-62	RG W-9 .03	.00	6-9-62	RG W-9		6-9-62												
5-28	.78	.00	1154	.00	.00	1202	.0000	.00										
5-29	1.21	.00	1200	1.40	.14	1204	.0096	T										
6-1	1.21	.00	1202	2.40	.22	1206	.0467	T										
6-3	.04	.00	1210	3.30	.56	1208	.298	.01										
6-4	.21	.00	1226	3.94	1.71	1210	.527	.02										
6-7	.36	.00	1230	2.70	1.89	1212	.885	.04										
6-8	.35	.00	1234	.90	1.95	1214	1.39	.08										
			1238	.30	1.97	1216	1.97	.14										
			1242	.60	2.01	1218	2.46	.21										
Watershed conditions: 100% bermuda-grass pasture, good cover, controlled grazing, grazed from May 7 to May 10. 8.840 in. available soil moisture in 0-60 in. profile on May 31.			1246	.75	2.06	1220	2.88	.30										
			1248	.60	2.08	1222	3.26	.40										
			1252	.15	2.09	1223	3.43	.46										
						1224	3.43	.51										
						1226	3.13	.62										
									1229	2.65	.77							
									1232	2.18	.89							
									1236	1.38	1.01							
									1240	.894	1.08							
									1246	.660	1.16							
						1247	.580	1.17										
						1248	.580	1.18										
						1251	.473	1.21										
						1256	.332	1.24										
						1304	.188	1.27										
						1312	.112	1.29										
						1323	.0614	1.31										
						1341	.0258	1.32										
						1400	.0116	1.33										
						1456	.0027	1.33										
						1651	.0000	1.34										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-4																		



RIESEL (WACO), TEXAS WATERSHED P-3

MONTHLY PRECIPITATION AND RUNOFF (Inches)									RIESEL (WACO), TEXAS WATERSHED P-4 AREA—0.243 ACRE							
Year \ Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.20 .00	1.91 .20	1.11 .06	3.65 .55	2.02 .00	5.39 1.34	.24 .00	.04 .00	2.98 .00	2.65 .00	4.20 .02	1.56 .00	26.95 2.17			
STA AV 2/ P (38-62) Q	2.65 .80	3.11 .81	1.79 .22	3.32 .23	3.10 .28	5.61 1.37	1.64 .10	1.41 .00	2.45 .23	3.05 .06	3.50 .91	3.22 .91	34.85 5.92			
MEAN P 3/ 74 YR	2.17	2.41	2.80	4.18	4.53	3.32	2.09	1.95	2.86	2.66	2.51	2.65	34.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS									RIESEL (WACO), TEXAS WATERSHED P-4							
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	6-9	3.51	6-9	1.29	6-9	1.32	6-9	1.34	6-9	1.34	6-9	1.34	6-8	1.34	6-8	1.34
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1962 4/	6-10 1941	7.79	11-22 1940	2.15	11-22 1940	2.25	11-22 1940	2.51	11-22 1940	2.65	11-22 1940	3.01	11-22 1940	5.69	11-22 1940	6.26
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 100% bermudagrass pasture. 1/ Precipitation obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938. Watershed discontinued from June 30, 1943, to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 74-yr. (1889-1962) U. S. Weather Bureau record period at Waco, Tex. 4/ Maximums for 1943 occurred before July; no maximums taken for 1944 through 1959.																
1962 SELECTED RUNOFF EVENT									RIESEL (WACO), TEXAS WATERSHED P-4							
Antecedent conditions			Rainfall					Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 9, 1962																
5-16-62	RG W-9 .03	.00	6-9-62	RG W-9 .00		6-9-62										
5-28	.78	.00	1154	.00	.00	1202	.0000	.00								
5-29	1.21	.00	1200	1.40	.14	1204	.0053	T								
6-1	1.21	.00	1202	2.40	.22	1206	.0156	T								
6-3	.04	.00	1210	3.30	.66	1208	.0313	T								
6-4	.21	.00	1226	3.94	1.71	1212	.0881	T								
6-7	.36	.00	1230	2.70	1.89	1214	.229	.01								
6-8	.35	.01	1234	.90	1.95	1216	.505	.02								
			1238	.30	1.97	1218	.944	.05								
			1242	.60	2.01	1220	1.55	.09								
Watershed conditions: 100% bermuda- grass pasture, good cover, controlled grazing, grazed from May 7 to May 10. 11.757 in. available soil moisture in 0-60 in. profile on May 31.																
			1246	.75	2.06	1222	2.19	.15								
			1248	.60	2.08	1224	2.77	.23								
			1252	.15	2.09	1226	3.31	.33								
						1228	3.51	.45								
						1230	3.51	.56								
						1232	3.20	.68								
						1234	2.84	.78								
						1236	2.50	.87								
						1238	2.18	.94								
						1240	1.85	1.01								
						1242	1.36	1.06								
						1246	.773	1.14								
						1254	.494	1.22								
						1300	.301	1.26								
						1306	.177	1.28								
						1312	.110	1.30								
						1316	.0742	1.30								
						1325	.0438	1.31								
						1335	.0258	1.32								
						1345	.0150	1.32								
						1415	.0078	1.33								
						1505	.0030	1.33								
						1830	.0000	1.34								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERI- MENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-5.																

Cooperative Research Project of USDA and Texas Agricultural Experiment Station



RIESEL (WACO), TEXAS WATERSHED P-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED W-3 44.1 AREA — 481 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 ¹ / _P	.39	.67	1.88	.47	2.87	4.75	5.56	4.52	2.67	1.89	2/.17	2/.40	26.24
	.12E	.01	.71	.00	.02	.49	.98	.76	.18	.21	.00	.00	3.48
STA AVG P (39-62) ² / _P	.30	.50	1.11	2.04	3.59	4.84	2.78	2.65	2.37	1.16	.65	.40	22.39
MEAN ³ / _P	.01	.04	.19	.11	.55	1.17	.51	.22	.34	.11	.03	T	3.28
70-YR ³ / _P	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962	8-23	.27	8-23	.23	8-23	.35	8-23	.45	8-23	.52	8-23	.52	8-23	.52	7-11	.91

MAXIMUMS FOR PERIOD OF RECORD																
1940 to 1962	7-3 1959	2.00	7-10 1951	4/1.32	6-1 1951	1.73	6-1 1951	2.35	6-15 1957	3.12	6-15 1957	3.52	6-15 1957	4.69	6-10 1957	4.80

Notes: Quality of records: Monthly P excellent; monthly Q good to excellent, except Jan. 1 to Apr. 1, which were good. Watershed conditions: Crops, including corn, sorghum, alfalfa, and meadow were in good condition. Fallow fields had a good cover of plant residues. 1/ Average of rain gages A-31-R, B-10-R, B-32-R, B-33-R, and B-36-R. Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 4/ One hour maximum volume of 1.32 in. also recorded on 7-3-59.

SLOPES: (Revision)	Slope—Percent							Soil group	
	0-1	1-3	3-7	3-10	7-10	Over 10			
Percent of area	13	0	0	0	0	0		Holdrege, Hastings, Hobbs, Geary	
	0	22	0	0	0	0		Holdrege, Hobbs, Geary	
	0	0	33	10	4	0		Holdrege, Geary, Holdrege and Geary	
	0	0	0	0	0	18		silty clay loams, Peorian	
	0	0	0	0	0	18		Peorian, Geary-Hobbs, Colby-Hobbs	

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Holdrege silt loam ¹ /	33	12	Moderate fine to medium granular	Moderate	Medium fine to medium subangular blocky	Moderate to moder- ately slow	34	Moderate	Medium
Hastings silt loam	21	12	Moderate fine to medium granular	Moderate	Medium fine to medium subangular blocky	Moderately slow	33	Moderate	Medium
Peorian soil material	20	5	Weak fine crumb	Moderate	None	None	5	Moderate	Medium
Hobbs silt loam (occasionally flooded)	7	30	Weak fine granu- lar or platy	Moderate	Weak fine granu- lar or platy	Moderate	36	Moderate	Medium
Holdrege silty clay loam (severely eroded)	6	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	21	Moderate	Medium
Geary silt loam	6	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	26	Moderate to moder- ately slow	Medium
Geary-Hobbs complex	5	9	See characteristics for Geary silt loam and Hobbs silt loam occasionally flooded (70% Geary, 30% Hobbs)						
Geary silty clay loam (severely eroded)	2	5	Weak fine crumb	Moderate to moder- ately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	20	Moderate to moder- ately slow	Medium

1/ Eroded phase constitutes 25 percent of the watershed area.

EROSION: (Revision)			
Erosion class	1	2	3
Percent of area	46	25	29

LAND CAPABILITY: (Revision)						
Class	I	II	III	IV	V	VI
Percent of area	0	34	33	15	0	18

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebraska, Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

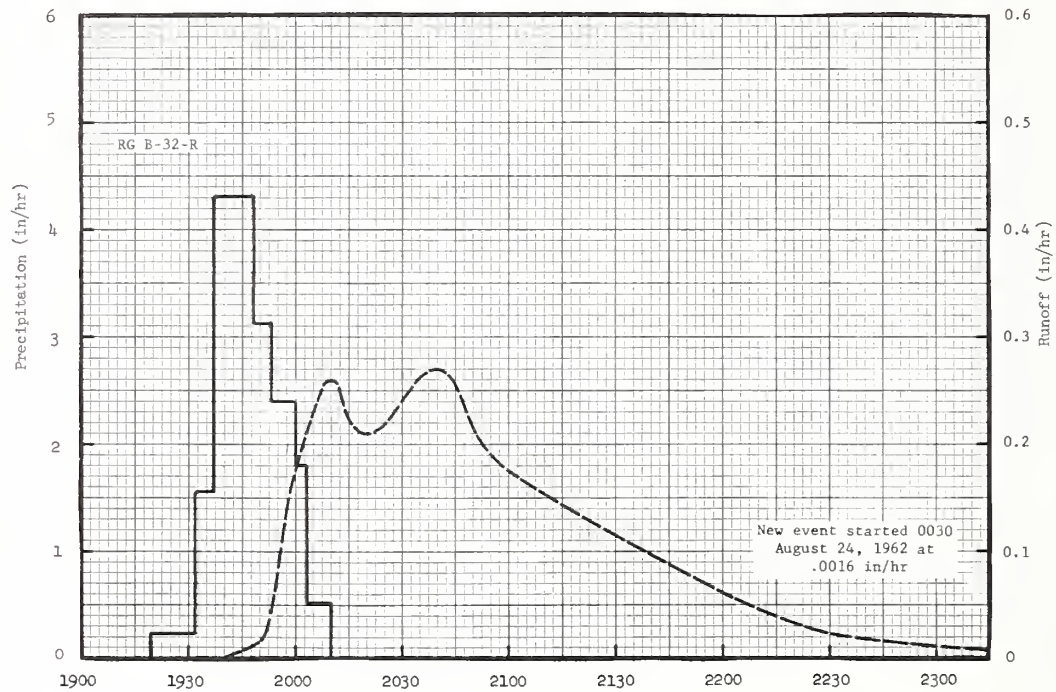
1962	DAILY AIR TEMPERATURE (degrees F)												HASTINGS, NEBRASKA WATERSHED W-3 44.1											
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	33	17	57	29	11	-4	43	26	64	40	80	50	87	64	78	61	75	54	77	49	59	34	57	45
2	39	22	46	32	22	11	39	19	72	39	55	48	88	59	77	58	78	59	65	49	48	37	58	45
3	41	27	65	36	36	15	46	32	77	45	55	51	84	65	81	61	82	64	54	47	44	32	54	45
4	43	25	68	36	30	9	60	34	82	46	58	52	89	67	87	63	76	46	68	44	48	30	57	33
5	39	10	60	14	23	4	57	31	88	59	79	56	85	67	89	63	62	39	72	52	48	18	45	21
6	19	3	26	8	22	6	61	39	89	49	76	61	85	64	82	69	65	49	67	57	44	25	40	18
7	38	26	24	10	32	16	59	30	84	55	79	59	86	73	88	60	71	56	74	50	62	33	44	20
8	34	14	33	19	42	21	59	32	93	60	73	58	92	63	88	63	77	61	68	43	52	20	46	29
9	22	-3	37	21	31	25	47	29	74	50	70	57	80	60	90	70	75	41	78	49	52	26	39	20
10	1	-8	40	28	32	25	57	34	83	55	76	61	81	66	89	69	57	39	80	57	58	31	37	19
11	8	-7	50	32	33	29	61	37	90	61	86	62	88	63	88	65	73	51	84	62	62	41	42	-2
12	29	-1	77	35	32	22	60	31	92	64	78	58	84	64	84	56	81	54	88	51	60	25	16	-9
13	40	23	44	32	29	15	48	26	94	68	79	55	82	65	82	57	87	60	70	54	64	35	29	-3
14	36	16	56	31	22	7	60	37	92	71	75	58	89	67	84	59	79	54	83	60	65	35	56	14
15	21	3	48	35	28	5	63	27	83	68	80	66	81	64	87	62	82	61	82	63	65	39	47	17
16	32	0	54	25	31	10	52	35	84	68	86	68	89	57	89	54	81	60	73	43	43	30	60	25
17	30	1	39	32	40	21	67	38	82	57	90	68	80	56	78	57	79	54	62	45	34	28	67	27
18	7	-3	37	20	45	31	66	40	82	59	86	58	78	62	85	58	73	51	54	48	31	24	60	29
19	2	-5	25	14	54	32	78	43	77	52	85	61	82	69	93	67	82	50	71	49	30	20	55	34
20	2	-10	39	17	61	39	77	52	82	58	88	59	88	61	94	68	65	40	74	41	40	26	45	25
21	4	-5	32	10	44	25	84	63	81	58	82	59	84	62	93	61	60	48	58	39	63	30	28	23
22	4	-6	15	1	51	30	85	43	86	57	83	63	90	64	87	68	55	50	71	47	53	25	38	24
23	18	-1	36	14	49	30	70	44	72	55	87	61	89	62	96	67	59	54	61	36	51	36	38	2
24	31	2	21	2	55	40	76	42	74	50	86	64	81	63	81	58	63	53	49	37	47	23	18	3
25	42	19	16	3	45	32	79	46	78	55	84	63	87	62	75	55	76	50	59	21	49	26	19	11
26	45	22	14	-1	44	27	83	50	78	56	80	64	77	53	84	59	70	50	46	26	53	29	17	-11
27	43	22	10	-7	67	33	81	53	74	58	82	63	65	57	86	58	78	43	67	32	47	38	27	-2
28	38	25	2	-11	72	43	60	35	75	61	82	67	82	62	90	61	69	44	77	42	49	47	35	10
29	51	27	---	---	75	32	62	43	67	57	85	66	77	59	84	63	69	53	59	29	50	44	38	10
30	46	32	---	---	46	31	55	43	70	55	82	66	82	62	90	69	70	48	63	43	51	36	21	10
31	51	21	---	---	51	31	---	---	81	55	82	66	77	60	77	56	---	---	60	29	---	---	45	13
AV.	29	9	38	18	40	21	63	38	81	56	79	60	84	63	86	62	72	51	68	45	51	30	41	17
MEAN	19.3		28.7		31.4		50.5		68.4		69.5		73.1		73.7		61.8		56.4		40.7		29.3	

NOTES: TEMPERATURE DATA FROM METEOROLOGICAL STATION FOR 24 HOURS ENDING 0800.

1962	DAILY PRECIPITATION (inches)					HASTINGS, NEBRASKA				WATERSHED W-3				44.1
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.00	.23	.00	.00	.00	.00	.09	.00		
2	.00	.00	.00	.00	.00	.88	.33	.19	.00	.02	.00	.00		
3	.00	.00	.00	.00	.00	.91	.00	.00	.00	.04	.00	.00		
4	.00	.00	.00	.00	.00	.00	.31	.57	.00	.00	.00	.13		
5	.00	.00	.00	.00	.00	.11	.03	.00	.00	.00	.00	.00		
6	.00	.00	.00	.00	.10	.00	.00	.00	.00	.56	.00	.00		
7	.02	.00	.00	.00	.00	.62	.00	.00	.00	.00	.00	.00		
8	.02	.00	.00	.00	.00	.34	.49	.00	.48	.00	.00	.00		
9	.00	.00	.00	.12	.00	.00	.00	.00	.76	.00	.00	.00		
10	.00	.00	.19	.00	.00	.00	.00	.08	.27	.00	.00	.00		
11	.00	.00	.16	.00	.00	.00	1.24	.07	.00	.00	.00	.00		
12	.00	.00	T	.21	.00	.00	.20	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.38	.00	.00	T	.00	.00		
14	.00	.00	.00	.00	.00	.00	.40	.00	.00	T	.00	.00		
15	.00	.28	.00	.00	.00	.00	.00	.06	.32	.00	.00	.00		
16	.00	.00	.00	.00	.29	.00	.00	.00	.00	.00	.06	.00		
17	.00	.25	.00	.00	.00	.00	1.47	.00	.45	.00	T	.00		
18	.00	.00	.00	.00	.88	.00	.42	.00	.00	.00	T	.00		
19	T	.00	.00	.00	.00	.00	.00	.00	.29	.00	.02	.00		
20	.00	.00	.37	.00	.85	.00	.29	.00	.00	1.47	.00	.12		
21	.00	.16	.44	.00	.00	.79	.00	T	.03	.00	.00	.00		
22	.00	.00	.33	.00	.30	.80	.00	.05	.10	.00	.00	.06		
23	.00	.00	T	.00	.00	.55	.00	2.45	.00	.00	.00	.00		
24	.00	.00	.08	.00	.00	.00	.00	.40	T	.00	.00	.00		
25	.10	T	.52	.00	.00	.00	.00	.00	.00	.00	.00	.09		
26	.33	.00	T	T	T	.00	.09	.00	.00	.00	.00	.00		
27	.00	.00	.00	.11	.15	.00	.70	.00	.00	.00	T	.00		
28	.00	.00	.00	.00	.28	.00	.00	.00	.00	.00	T	.00		
29	.00	-----	.00	.00	.00	.00	.05	.00	.00	.00	T	.00		
30	.00	-----	.00	.09	.41	.00	.00	.00	.00	.00	T	.00		
31	.00	-----	.00	-----	.00	-----	.00	1.15	-----	.00	-----	.00		
TOTAL	.47	.69	2.09	.51	3.26	5.23	6.40	5.02	3.01	2.09	.17	.40		
STA AV	.36	.57	1.25	1.97	3.97	4.89	3.18	2.78	2.36	1.21	.66	.40		

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED W-3		44.1
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF		
DATE MO-DAY	RAINFALL (inches) 1/	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
Event of August 23, 1962									
7-26	.07	.00	8-23	RG	B-32-R		8-23	1940	.0000
7-27	.65	.06		1919	.00	.00		1950	.0168
7-29	.06	.00		1932	.23	.05		2000	.1760
8-2	.17	.00		1937	1.56	.18		2010	.2600
8-4	.47	.03		1948	4.31	.97		2020	.2100
8-10	.12	.00		1953	3.12	1.23		2040	.2700
8-11	.04	.00		2000	2.40	1.51		2100	.1760
8-15	.05	.00		2003	1.80	1.60		2130	.1150
8-22	.09	.00		2010	.51	1.66		2200	.0612
8-23	2/ .58	.00						2230	.0241
Watershed Conditions:			8-23	RG	A-31-R		8-23	2330	.0047
Corn - 8' high, ears well filled				1920	.00	.00		2400	.0022
Wheat - harvested				1924	1.10	.11	8-24	0030	3/ .0016
Oats - harvested				1936	.25	.16			.4032
Sorghum - 5' tall, good condition				1946	3.24	.70			
Alfalfa - 12" high, good condition				1950	1.20	.78			
Meadow - 18" high, good condition				2001	2.29	1.20			
The land use in percentage of the watershed was as follows:				2006	1.20	1.30			
Percent				2010	.60	1.34			
Corn. 9			8-23	RG	B-10-R				
Sorghum. 22				1920	.00	.00			
Oats. 1				1932	.10	.02			
Wheat. 26				1934	1.50	.07			
Fallow. 17				1943	3.46	.59			
Pasture. 18				1952	2.06	.90			
Meadow. 2				1959	1.62	1.09			
Sudan. 2				2007	.83	1.20			
Farm Yard. 1				2020	.14	1.23			
Roads. 2			8-23	RG	B-33-R				
Total. 100				1919	.00	.00			
Note: Watershed was predominantly farmed in straight rows.				1929	.18	.03			
				1937	.53	.10			
				1943	1.50	.25			
				1947	4.05	.52			
				1953	3.40	.86			
				1956	2.80	1.00			
				2001	2.16	1.18			
				2005	3.15	1.37			
				2009	1.65	1.46			
				2015	.50	1.51			
				2020	.24	1.53			
				2030	.06	1.54			
			8-23	RG	B-36-R				
				1920	.00	.00			
				1926	.70	.07			
				1934	.00	.07			
				1937	1.80	.16			
				1942	3.60	.46			
				1945	6.00	.76			
				1953	4.65	1.38			
				1958	2.28	1.57			
				2002	3.00	1.77			
				2010	.60	1.85			
				2015	.12	1.86			
				5 RG	AVG 1/	1.53			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 485. FOR MAP OF W-3, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 44.1-4. 1/ ARITHMETIC AVERAGE OF B-32R, A-31-R, B-10-R, B-33-R, AND B-36-R. 2/ RAINFALL FROM 0100 TO 0400. 3/ BEGINNING OF A NEW EVENT.



August 23, 1962

HASTINGS, NEBRASKA WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA AREA — 2,086 ACRES (3.26 SQ. MILES)								WATERSHED W-8 44.3	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	1/P	.37	.68	2.03	.42	2.85	4.74	5.40	4.85	2.82	2.05	2/.13	2/.40	26.74	
	Q	.29E	.01E	.28	.00	T	.23	.57	.79	.14	.21	.00	.00	2.52	
	STA AVG P	.31	.53	1.17	2.02	3.57	4.86	2.82	2.70	2.35	1.17	.67	.41	22.58	
	(39-62) Q	.02	.02	.13	.09	.44	1.07	.42	.24	.02	.08	.02	T	2.77	
	MEAN 3/P	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79	
70-YR															

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	8-23	.13	8-23	.11	8-23	.17	8-23	.43	8-23	.57	8-23	.61	8-23	.61	8-23	.78

MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	7-3 1959	.51	7-3 1959	.42	7-3 1959	.71	6-15 1957	1.67	6-15 1957	2.58	6-15 1957	3.43	6-15 1957	4.86	6-13 1957	4.99

NOTES: Quality of records: Monthly P excellent; monthly Q good to excellent, except Jan. 1 to Apr. 1, which were good. Watershed conditions: Crops, including corn, sorghum, alfalfa, and meadow were in good condition. Fallow fields had a good cover of plant residues. For daily air temperature range and daily precipitation at meteorological station, see p. 44.1-2. 1/ Arithmetic average of rain gages A-31-R, B-32-R, C-31-R, and D-31-R. Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on records of D-31-R. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr.

SLOPES: (Revision)	Slope - Percent							Soil group	
	0-1	1-3	3-7	3-10	7-10	Over 10			
	Percent of area								
	10	0	0	0	0	0	Holdrege, Hastings, Hobbs, Geary		
	0	22	0	0	0	0	Holdrege, Hobbs, Geary		
	0	0	35	3	16	0	Holdrege, Geary, Holdrege and Geary		
	0	0	0	0	0	14	silty clay loams, Peorian		
	0	0	0	0	0	14	Peorian, Geary-Hobbs, Colby-Hobbs		

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Percent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Holdrege silty clay loam (severely eroded)	30	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	21	Moderate	Medium
Holdrege silt loam 1/	25	12	Moderate fine to medium granular	Moderate	Medium fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium
Hobbs silt loam (occasionally flooded)	14	30	Weak fine granular or platy	Moderate	Weak fine granular or platy	Moderate	36	Moderate	Medium
Peorian soil material	12	5	Weak fine crumb	Moderate	None	None	5	Moderate	Medium
Hastings silt loam	6	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	33	Moderate	Medium
Geary silty clay loam (severely eroded)	5	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	20	Moderate to moderately slow	Medium
Geary silt loam	4	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	26	Moderate to moderately slow	Medium
Geary-Hobbs Complex	2	9	See characteristics for Geary silt loam and Hobbs silt loam (occasionally flooded) (70% Geary 30% Hobbs)						
Colby-Hobbs 2/ Complex	2	6	Moderate fine granular	Moderate	Weak fine to medium subangular blocky	Moderate to moderately slow	12	Moderate	Medium

1/ Eroded phase constitutes 10 percent of the watershed area. 2/ Characteristics are for Colby soil.

EROSION: (Revision)			
Erosion class	1	2	3
Percent of area	37	16	47

LAND CAPABILITY: (Revision)						
Class	I	II	III	IV	V	VI
Percent of area	0	26	22	37	0	15

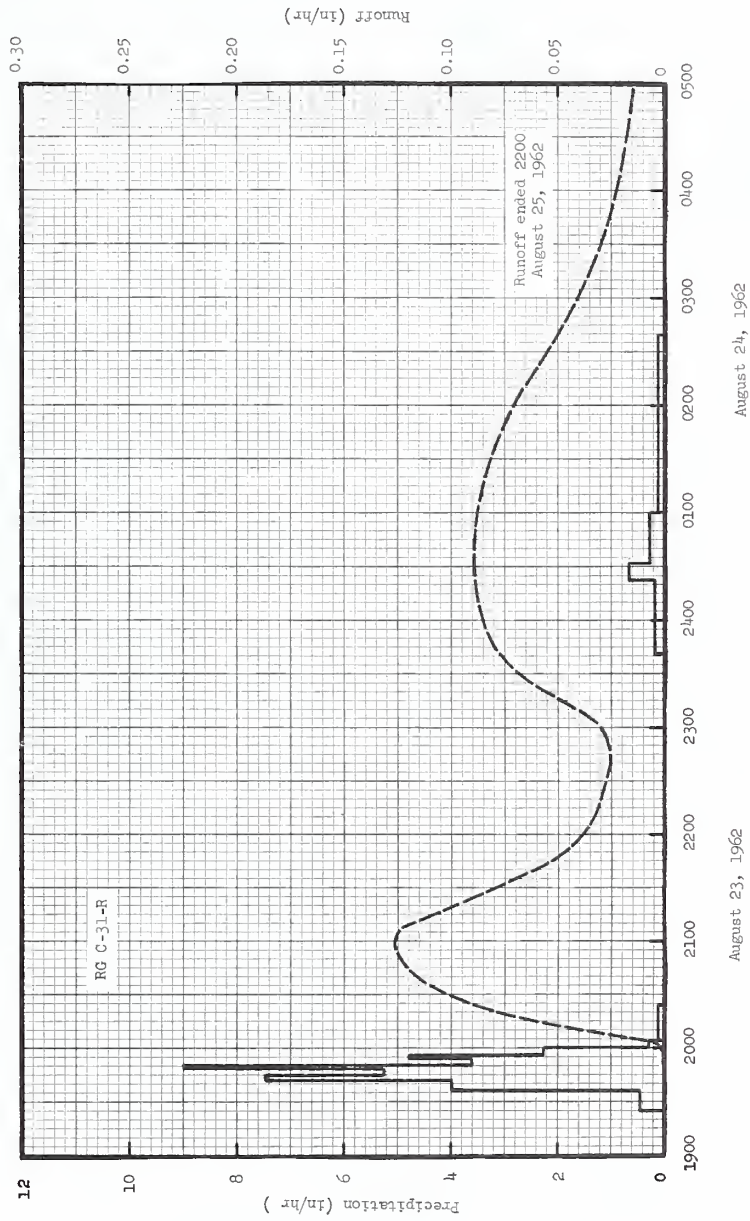
GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebraska, Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

1962			SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA		WATERSHED W-8		44.3	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches) <u>1/</u>	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of August 23-25, 1962											
7-26	.09	.00	8-23	RG	C-31-R	.00	8-23	1940	.0000	.0000	
7-27	.64	.03		1925	.00	.00		2000	.0013	.0003	
7-29	.07	.00		1936	.22	.04		2020	.0784	.0136	
8-2	.30	T		1942	4.00	.40		2040	.1170	.0461	
8-4	.35	T		1944	7.50	.69		2100	.1270	.0868	
8-10	.17	.00		1948	5.25	1.04		2120	.0960	.1240	
8-11	.05	.00		1950	9.00	1.34		2200	.0377	.1685	
8-15	.04	.00		1954	3.60	1.57		2240	.0260	.1898	
8-22	.05	.00		1956	4.80	1.73		2300	.0292	.1990	
8-23	<u>2/</u> .56	.00		2000	2.25	1.88		2330	.0684	.2234	
Watershed Conditions:				2004	.30	1.90		2400	.0864	.2621	
Corn - 8' high, ears well filled				2024	.09	1.93	8-24	0030	.0898	.3061	
Wheat - harvested			8-24	2340	.00	1.93		0100	.0879	.3505	
Oats - harvested				0022	.18	2.06		0200	.0717	.4303	
Sorghum - 5' tall, good condition				0032	.66	2.17		0300	.0422	.4873	
Alfalfa - 12" high, good condition				0100	.25	2.29		0400	.0243	.5205	
Meadow - 18" high, good condition				0240	.07	2.41		0500	.0150	.5402	
The land use in percentage of the watershed was as follows:			8-23	RG	A-31-R			0600	.0110	.5532	
Percent				1920	1.00	.00		0800	.0106	.5748	
Corn 6				1924	1.65	.11		0900	.0087	.5844	
Sorghum 22				1936	.25	.16		1100	.0038	.5969	
Oats 4				1946	3.24	.70		1300	.0017	.6024	
Wheat 17				1950	1.20	.78		1600	.0007	.6066	
Fallow 16				2001	2.29	1.20	8-25	2200	.0000	.6095	
Alfalfa 8				2006	1.20	1.30					
Pasture 21				2010	.60	1.34					
Meadow 2				2400	.04	1.36					
Sudan 1			8-24	0018	.07	1.38					
Farm Yard 1				0029	.93	1.55					
Roads 2				0039	.30	1.60					
Total <u>100</u>				0050	.33	1.66					
Note: Watershed was predominantly farmed in straight rows				0110	.09	1.69					
				0150	.09	1.75					
				0230	.03	1.77					
			8-23	RG	B-32-R						
				1919	.00	.00					
				1932	.23	.05					
				1937	1.56	.18					
				1948	4.31	.97					
				1953	3.12	1.23					
				2000	2.40	1.51					
				2002	1.80	1.60					
				2010	.51	1.66					
				2330	.00	1.66					
			8-24	0020	.10	1.74					
				0030	.90	1.89					
				0055	.26	2.00					
				0240	.07	2.12					
			8-23	RG	D-31-R						
				1925E	.00	.00					
			8-24	0230E		2.61					
				4 RG	AVG <u>1/</u>	2.23					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2103. FOR MAP OF W-8, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 44.1-4. 1/ ARITHMETIC AVERAGE OF RAIN GAGES A-31-R, B-32-R, C-31-R, AND D-31-R. 2/ RAINFALL FROM 0100 TO 0400.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2103. FOR MAP OF W-8, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 44.1-4. 1/ ARITHMETIC AVERAGE OF RAIN GAGES A-31-R, B-32-R, C-31-R, AND D-31-R. 2/ RAINFALL FROM 0100 TO 0400.



HASTINGS, NEBRASKA WATERSHED W-8

MONTHLY PRECIPITATION AND RUNOFF (inches)							HASTINGS, NEBRASKA AREA — 3490 ACRES (5.45 SQ. MILES)							WATERSHED W-11 44.4	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962 1/	P	.37	.68	2.10	.42	2.95	4.79	5.47	5.10	3.40	2.19	2/.16	2/.39	28.02	
	Q	.21	.00	.52	.00	T	.21	.48	.81	.41	.25	.00	.00	2.89	
STA AV P (39-62) Q	P	.32	.55	1.20	2.02	3.54	4.88	2.85	2.72	2.36	1.18	.69	.43	22.74	
	Q	.01	.01	.13	.08	.41	.96	.39	.23	.24	.08	.01	T	2.55	
MEAN P 70 YR 3/		.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-15	.07	8-23	.06	8-23	.12	8-23	.35	8-23	.58	8-23	.70	8-23	.70	8-23	.78

MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	6-15 1957	.41	6-15 1957	.40	6-15 1957	.78	6-15 1957	1.83	6-15 1957	2.72	6-15 1957	3.27	6-15 1957	4.87	6-13 1957	4.93

Notes: Quality of Records: Monthly P excellent; monthly Q good to excellent, except Jan. 1 to Apr. 1, which were good. Watershed conditions: Crops, including corn, sorghum, alfalfa, and meadow were in good condition. Fallow fields had a good cover of plant residues. For daily air temperature range and daily precipitation at meteorological station, see p. 44.1-2. 1/ Arithmetic average of rain gages A-31-R, B-32-R, C-31-R, D-31-R, E-30-R, and G-42-R. Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on records of D-31-R and G-42-R. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr.

SLOPES: (Revision)								Soil group			
Slope - Percent Percent of area		0-1	1-3	3-7	3-10	7-10	Over 10	Holdrege, Hastings, Hobbs, Geary, Hord Holdrege, Hobbs, Geary, Hord Holdrege, Geary, Holdrege and Geary silty clay loams, Peorian Peorian, Geary-Hobbs, Colby-Hobbs			
		10	0	0	0	0	0				
		0	21	0	0	0	0				
		0	0	44	3	12	0				
		0	0	0	0	0	10				

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Topsoil			Subsoil			Substratum			Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability			
Holdrege silt loam 1/	36	12	Moderate fine to medium granular	Moderate	Medium fine to medium subangular blocky	Moderate to moder- ately slow	34	Moderate		Medium	
Holdrege silty clay loam (severely eroded)	27	5	Weak fine crumb	Moderate to moder- ately slow	Moderate fine to medium subangular blocky	Moderate to moder- ately slow	21	Moderate		Medium	
Hobbs silt loam (occasionally flooded)	14	30	Weak fine granu- lar or platy	Moderate	Weak fine granu- lar or platy	Moderate	36	Moderate		Medium	
Peorian soil material	10	5	Weak fine crumb	Moderate	None	None	5	Moderate		Medium	
Hastings silt loam	4	12	Moderate fine to medium granular	Moderate	Medium fine to medium subangular blocky	Moderate to moder- ately slow	33	Moderate		Medium	
Geary silty clay loam (severely eroded)	3	5	Weak fine crumb	Moderate to moder- ately slow	Moderate fine to medium subangular blocky	Moderate to moder- ately slow	20	Moderate to moderately slow		Medium	
Geary-Hobbs complex	2	9	See characteristics for Geary silt loam and Hobbs silt loam occasionally flooded (70% Geary, 30% Hobbs)								
Colby-Hobbs complex 2/	2	6	Moderate fine granular	Moderate	Weak fine to medium subangular blocky	Moderate to moder- ately slow	12	Moderate to moderately slow		Medium	
Geary silt loam	1	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moder- ately slow	26	Moderate to moderately slow		Medium	
Hord silt loam	1	18	Weak fine granular	Moderate	Weak fine to medium subangular blocky	Moderate to moder- ately slow	36	Moderate to moderately slow		Medium	

1/Eroded phase constitutes 10 percent of the watershed area. 2/Characteristics are for Colby soil.

EROSION: (Revision)			
Erosion class	1	2	3
Percent of area	40	20	40

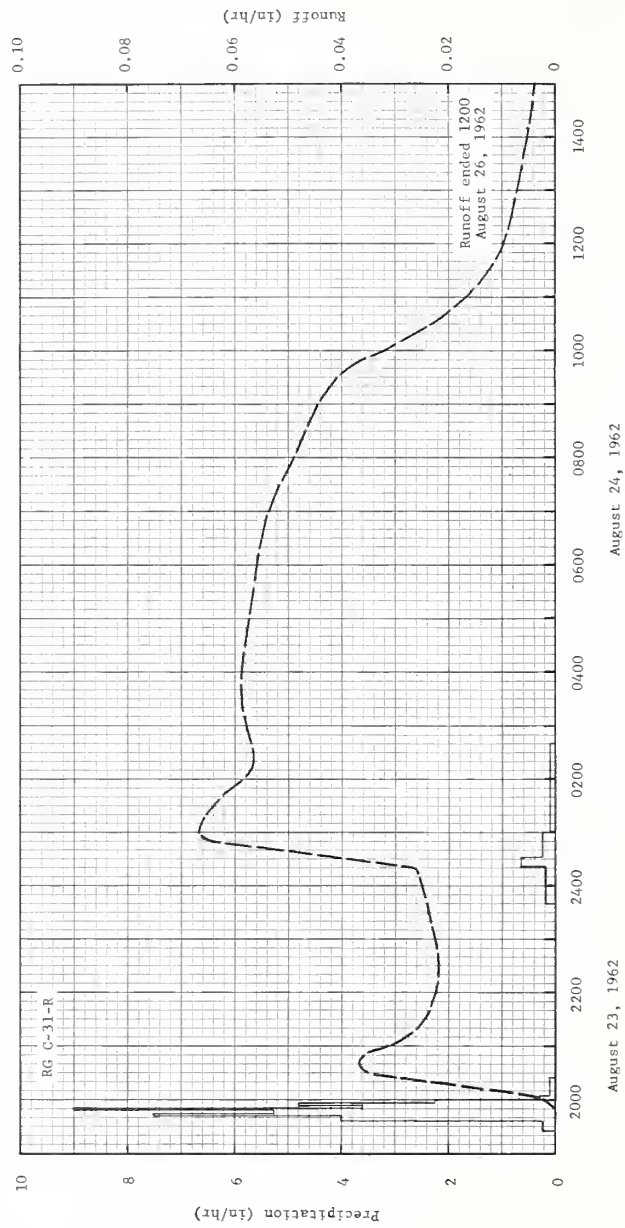
LAND CAPABILITY: (Revision)						
Class	I	II	III	IV	V	VI
Percent of area	0	28	27	34	0	11

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. 3/ Source of Data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebraska, Hydrol.Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED W-11 44.4			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23-26, 1962										
7-26	.09	.00	8-23	RG	C-31-R		8-23	1950	.0000	.0000
7-27	.65	.00		1925	.00	.00		2010	.0109	.0019
7-29	.09	.02		1936	.22	.04		2030	.0343	.0094
8-2	.44	T		1942	4.00	.44		2040	.0367	.0153
8-4	.31	.01		1944	7.50	.69		2110	.0276	.0314
8-10	.30	T		1948	5.25	1.04		2210	.0221	.0562
8-11	.04	.00		1950	9.00	1.34		2240	.0221	.0673
8-15	.04	.00		1954	3.60	1.57		2400	.0251	.0989
8-20	.01	.00		1956	4.80	1.73	8-24	0020	.0264	.1073
8-22	.02	.00		2000	2.25	1.88		0040	.0512	.1203
8-23	2/ .48	.00		2004	.30	1.90		0100	.0667	.1399
Watershed Conditions:				2024	.09	1.93		0130	.0640	.1726
Gorn - 8' high, ears well filled			8-24	2340	.00	1.93		0210	.0572	.2130
Wheat - harvested				0022	.18	2.06		0230	.0572	.2321
Oats - harvested				0032	.66	2.17		0330	.0587	.2900
Sorghum - 5' tall, good condition				0100	.25	2.29		0500	.0572	.3770
Meadow - 18" high, good condition			8-23	0240	.07	2.41		0630	.0548	.4610
The land use in percentage of the watershed was as follows:			8-23	RG	A-31-R 3/			0800	.0494	.5391
Percent				1920	.00	.00		0900	.0440	.5858
Corn. 4			8-24	0230		1.77		0930	.0407	.6070
Sorghum. 22				RG	B-32-R			1030	.0239	.6393
Oats. 2			8-23	1919	.00	.00		1100	.0172	.6496
Wheat. 18				1932	.23	.05		1200	.0102	.6633
Fallow. 17				1937	1.56	.18		1400	.0057	.6792
Alfalfa. 8				1948	4.31	.97		1600	.0031	.6880
Pasture. 22				1953	3.12	1.23		1800	.0018	.6929
Meadow. 3				2000	2.40	1.51		2100	.0010	.6971
Sudan. 1				2002	1.80	1.60		2400	.0006	.6995
Farm Yard. 1				2010	.51	1.66	8-25	1200	.0001	.7028
Roads. 2				2330	.00	1.66	8-26	1200	.0000	.7040
Total. 100			8-24	0020	.10	1.74				
Note: Watershed was predominantly farmed in straight rows.				0030	.90	1.89				
				0055	.26	2.00				
				0240	.07	2.12				
			8-23	RG	D-31-R					
				1925E	.00	.00				
			8-24	0230E		2.61				
			8-23	RG	E-30-R					
				1938	.00	.00				
				1941	2.00	.10				
				1947	5.80	.68				
				1952	7.92	1.34				
				1956	4.65	1.65				
				2000	3.15	1.86				
				2010	.06	1.87				
				2350	.00	1.87				
				2400	.24	1.91				
			8-24	0010	.96	2.07				
				0022	2.70	2.61				
				0032	1.44	2.85				
				0100	.33	3.00				
				0200	.10	3.10				
			8-23	RG	G-42-R					
				1940	.00	.00				
				1948	4.42	.59				
				1953	3.72	.90				
				1958	2.76	1.13				
				2004	.20	1.15				
				2104	.01	1.16				
				2355	.00	1.16				
			8-24	0014	.38	1.28				
				0032	2.10	1.91				
				0102	.58	2.20				
				0240	.09	2.34				
			6 RG	AVG 1/		2.39				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3519. FOR MAP OF W-11, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISG. PUB. 994, P. 44.1-4. 1/ ARITHMETIC AVERAGE OF 6 RAIN GAGES C-31-R, A-31-R, B-32-R, D-31-R, E-30-R, AND G-42-R. 2/ RAINFALL FROM 0100 TO 0400. 3/ FOR COMPLETE INTENSITY RECORD SEE P. 44.3-2.



HASTINGS, NEBRASKA WATERSHED W-11

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 1-H AREA—3.62 ACRES								44.5		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 1/2 P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/ .17	2/ .40	26.57			
Q	.10E	.00	.14	.00	.00	.00	T	.02	.00	T	.00	.00	.26			
STA AV P	.30	.50	1.12	1.99	3.66	4.90	2.83	2.73	2.43	1.20	.67	.39	22.72			
(40-62) Q	.01	T	.03	T	.02	.11	.06	.01	.01	.01	.00	.00	.26			
MEAN P 3/	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79			
70 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	3-20	.04	3-20	.04	3-20	.06	3-20	.09	3-20	.10	3-20	.11	3-20	.12	3-20	.14
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1962	6-16 1957	1.35	6-1 1951	.69	6-1 1951	.89	6-1 1951	.92	6-1 1951	.92	6-1 1951	.92	6-15 1957	.96	6-10 1957	1.13
Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: Watershed in native meadow, excellent condition, mowed for hay first of September. 1/ Months of Jan. to April and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr.																
SLOPES: (Revision)																
Slope - Percent		0-3	3-7	3-10	Over 10											
Percent of area		8	0	70	22											
SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.																
Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage							
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Holdrege silt loam	100	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium							
EROSION: (Revision)																
Erosion class		1	2	3												
Percent of area		100	0	0												
LAND CAPABILITY: (Revision)																
Class		I	II	III	IV	V	VI									
Percent of area		0	8	0	70	0	22									
GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).																
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).																
SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA WATERSHED 1-H 44.5										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (c/s)	ACC. (inches)						
Event of July 10, 1951																
	RG B-36-R		7-10	RG	B-36-R		7-10	0606	.00	.00						
6-13	.79	T		0530	.00	.00		0607	.03	T						
6-14	.13	T		0542	.15	.03		0608	.08	T						
6-21	.48	.00		0548	1.10	.14		0610	.15	.01						
6-22	.83	.00		0554	2.20	.36		0611	.24	.01						
6-25	.74	.00		0600	3.70	.73		0613	.56	.02						
6-26	1.09	.12		0606	5.50	1.28		0615	.83	.05						
6-27	.10	.00		0610	2.85	1.47		0617	1.09	.08						
7-10	4/ .16	.00		0626	1.61	1.90		0620	1.16	.13						
				0634	2.10	2.18		0622	1.07	.17						
Continued on next page						Continued on next page										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.650. FOR MAP OF AREA, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.5-4. 4/ RAINFALL FROM 0452 TO 0530 PRIOR TO SELECTED EVENT.																

SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA		WATERSHED 1-H		44.5	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of July 10, 1951 continued											
Watershed conditions: 100% native grass meadow, 12" to 16" high and in good condition.				0642	.90	2.30		0625	.93	.22	
				0648	.40	2.34		0630	.71	.29	
				0658	.36	2.40		0635	.62	.34	
				0858	.02	2.44		0637	.65	.37	
								0640	.72	.40	
		</									

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 2-H AREA—3.40 ACRES								44.6
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962 1/P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57	
Q	.15E	.00	.36	.00	.00	T	.03	.43	.00	T	.00	.00	.97	
STA AV3/P	.31	.55	1.16	2.01	3.70	4.71	3.10	2.79	2.46	1.27	.75	.44	23.25	
(40-62)Q	.02	.01	.07	.01	.09	.15	.16	.07	.03	T	.00	.00	.61	
MEAN P 4/	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79	
70 YR														

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1962	8-23	1.23	8-23	.43	8-23	.43	8-23	.43	8-23	.43	8-23	.43	8-23	.43	8-23	.43

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962	7-3	2.52	7-3	1.38	7-3	1.41	7-3	1.41	7-3	1.41	7-3	1.41	7-3	1.41	6-27	1.49
1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959	1959

Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1, to April 1, which are good. Watershed conditions: Watershed in native meadow; excellent condition—mowed once for hay on first of September. 1/ Months of Jan., Feb., Mar., Apr., and Dec., may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1955-57.

SLOPES: (Revision)		Slope - Percent				Soil group	
	Percent of area	0-3	3-7	3-10	Over 10		
		21	60	0	0		Holdrege silt loam
		0	0	0	19		Colby-Hobbs complex

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Percent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permeability	Structure	Permeability	Avg. depth (in.)	Permeability	
Holdrege silt loam	80	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium
Colby-Hobbs Complex	20	6	Moderate fine granular	Moderate	Weak fine to medium subangular blocky	Moderate to moderately slow	12	Moderate to moderately slow	Medium
Colby silt loam 70%									
Hobbs silt loam 30%		30	Weak fine granular or platy	Moderate	Weak fine granular or platy	Moderate	36	Moderate	Medium

EROSION: (Revision)		Erosion class		
	Percent of area	1	2	3
		100	0	0

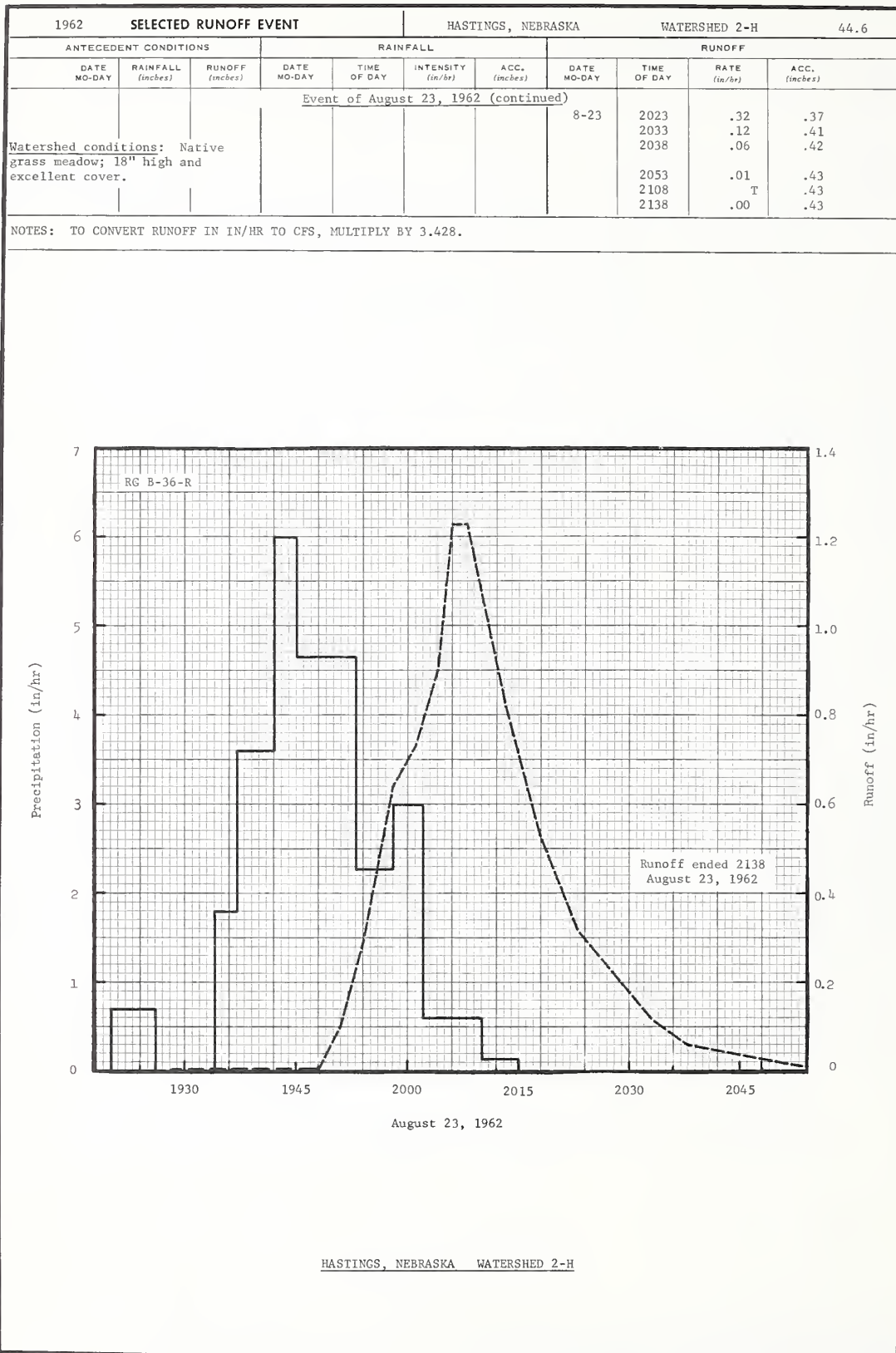
LAND CAPABILITY: (Revision)		Class					
	Percent of area	I	II	III	IV	V	VI
		0	21	0	60	0	19

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18, changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

1962 SELECTED RUNOFF EVENT					HASTINGS, NEBRASKA WATERSHED 2-H				44.6	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
				Event of August 23, 1962						
	RG B-36-R		8-23	RG	B-36-R		8-23	1928	.00	.00
7-26	.07	.00		1920	.00	.00		1938	T	T
7-27	.65	.00		1926	.70	.07		1948	.01	T
7-29	.06	.00		1934	.00	.07		1951	.10	T
8-2	.17	.00		1937	1.80	.16		1954	.29	.01
8-4	.51	.00		1942	3.60	.46		1958	.64	.04
8-10	.13	.00		1945	6.00	.76		2001	.73	.08
8-11	.03	.00		1953	4.65	1.38		2004	.90	.12
8-15	.05	.00		1958	2.28	1.57		2006	1.23	.16
8-22	.06	.00		2002	3.00	1.77		2008	1.23	.20
8-23	6/.58	.00		2010	.60	1.85		2013	.83	.28
				2015	.12	1.86		2018	.53	.34

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.428. FOR MAP OF AREA, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.6-3. 6/ RAINFALL FROM 0100 TO 0420 - 0.53 AND FROM 0625 TO 0655 - 0.05 PRIOR TO SELECTED EVENT.



MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA								WATERSHED 3-H		44.7
						AREA—3.77 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 1/ P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57			
Q	.15E	.00	.53	.00	.01	.20	.92	1.21	.24	.24	.00	.00	3.50			
STA AV3/ P	.31	.55	1.16	2.01	3.70	4.71	3.10	2.79	2.46	1.27	.75	.44	23.25			
(40-62) Q	.03	.03	.27	.24	.87	1.56	.86	.41	.40	.24	.05	.00	4.96			
MEAN P 4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79			

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	8-23	1.99	8-23	.83	8-23	.84	8-23	.91	8-23	.93	8-23	.93	8-23	.93	8-23	1.18

MAXIMUMS FOR PERIOD OF RECORD																
1940 to 1962	7-3	6.45	7-3	2.34	7-3	2.35	6-1	3.36	6-1	3.74	6-1	3.74	6-1	3.74	6-1	4.31
1959	1959		1959		1959		1951		1951		1951		1951		1951	

Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: Watershed in sorghum, thin stand, with yield of 36 bu./acre; general crop rotation has been corn (or sorghum), fallow, and wheat, using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began March 27, 1939; part year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1955-57.

SLOPES: (Revision)		Slope - Percent				Soil group	
		0-3	3-7	3-10	Over 10		
	Percent of area	13	72	0	0		Holdrege silt loam
		0	0	0	15		Holdrege silty clay loam

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth (in.)	Permeability	
Holdrege silt loam	75	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular, blocky	Moderate to moderately slow	34	Moderate	Medium
Holdrege silty clay loam (severely eroded)	25	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular, blocky	Moderate to moderately slow	21	Moderate	Medium

EROSION: (Revision)		Erosion class		
		1	2	3
	Percent of area	0	75	25

LAND CAPABILITY: (Revision)		Class					
		I	II	III	IV	V	VI
	Percent of area	0	13	0	72	0	15

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18, changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), Central Loess Plains (H-75).

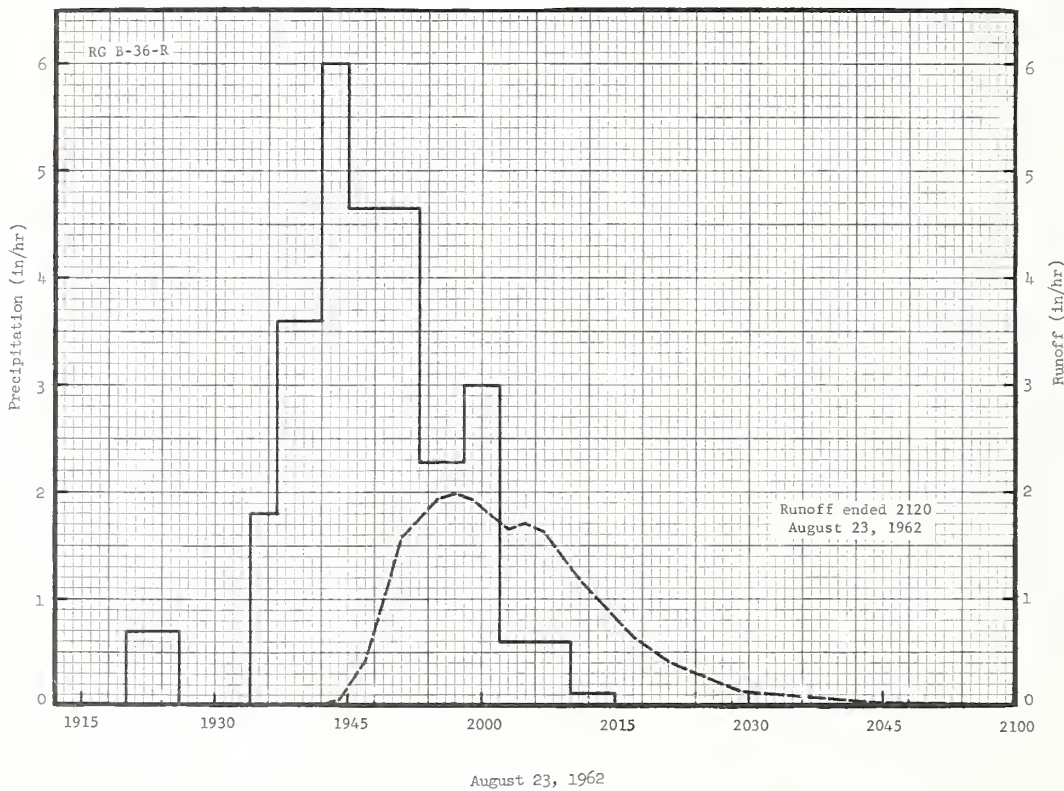
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

SELECTED RUNOFF EVENT				HASTINGS, NEBRASKA				WATERSHED 3-H		44.7
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23, 1962										
7-26	RG B-36-R	.00	8-23	RG	B-36-R	.00	8-23	1942	.00	.00
7-27	.07	.08		1920	.00	.00		1944	.06	T
7-29	.65	.00		1926	.70	.07		1947	.42	.01
8-2	.06	.00		1934	.00	.07		1949	1.00	.04
	.17	.00		1937	1.80	.16		1951	1.58	.08
8-4	.51	.02		1942	3.60	.46		1955	1.94	.20
8-10	.13	.00		1945	6.00	.76		1957	1.99	.26
8-11	.03	.00		1953	4.65	1.38		1959	1.94	.33
8-15	.05	.00		1958	2.28	1.57		2003	1.66	.45
8-22	.06	.00		2002	3.00	1.77		2005	1.71	.50
8-23	6/.58	.00	Continued on next page				Continued on next page			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.802. FOR MAP OF AREA, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.7-4. 6/ RAINFALL FROM 0100 TO 0420 - 0.53 AND FROM 0625 TO 0655 - 0.05 PRIOR TO SELECTED EVENT.

SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 3-H				44.7
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Watershed conditions: 100% sorghum--about 5 foot high, heads well filled; cultivated on June 29. Crop rotation of sorghum, fallow and wheat.			(Event of August 23, 1962 continued)								
			8-23	2010	.60	1.85	8-23	2007	1.63	.56	
				2015	.12	1.86		2011	1.19	.65	
								2017	.65	.75	
								2021	.42	.78	
								2029	.14	.82	
								2044	.03	.84	
								2055	.01	.84	
								2120	.00	.85	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.802.



HASTINGS, NEBRASKA WATERSHED 3-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 4-H 44.8 AREA—3.64 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	1/ P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57	
	Q	.20E	.00	.65E	.00	.04	.37	2.04	1.67	.18	.21	.00	.00	5.36	
STA AV ² /P		.31	.56	1.17	2.06	3.69	4.66	3.08	2.77	2.48	1.26	.74	.43	23.21	
(40-62) Q		.03	.02	.22	.22	.90	1.24	.72	.31	.44	.22	.02	T	4.34	
MEAN P h/70 YR		.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS														
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL												
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	5.48	8-23	1.30	8-23	1.30	8-23	1.50	8-23	1.51	8-23	1.51	8-23	1.51
													7-11	2.00

MAXIMUMS FOR PERIOD OF RECORD 5/																
1940 TO 1962	6-26 1959	7.67	7-3 1959	6/2.13E	7-3 1959	2.15E	6-1 1951	3.19	6-1 1951	3.19	6-1 1951	3.19	6-1 1951	3.19	3-26 1960	3.75E

Notes: Quality of records: Monthly P and Q, excellent, except Dec. 1 to Apr. 1, which are fair. Watershed conditions: Watershed in fallow in 1962; general crop rotation has been wheat, corn (or sorghum), and fallow, using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part-year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1955-57. 6/ Previously reported as 2.15 in.

SLOPES: (Revision)	Slope - Percent				Soil group	
	0-3	3-7	3-10	Over 10		
	15	74	0	0		Holdrege silt loam
	0	0	0	11		Holdrege silty clay loam

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per-cent of area	Avg depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme-ability	Structure	Perme-ability	Avg. depth (in.)	Perme-ability	
Holdrege silty clay loam (severely eroded)	80	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	21	Moderate	Medium
Holdrege silt loam	20	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium

EROSION: (Revision)	Erosion class			
	1	2	3	
	0	20	80	

LAND CAPABILITY: (Revision)	Class					
	I	II	III	IV	V	VI
	0	15	0	74	0	11

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

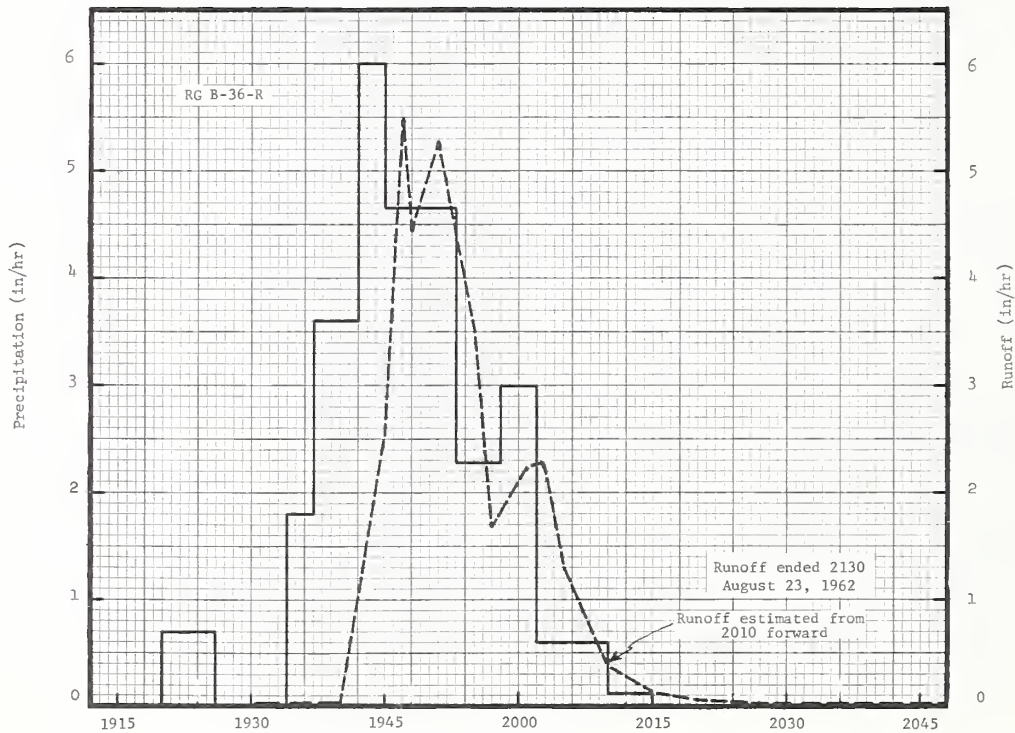
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U.S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

1962 SELECTED RUNOFF EVENT				HASTINGS, NEBRASKA WATERSHED 4-H 44.8							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
	RG B-36-R		Event of August 23, 1962								
7-26	.07	.00	8-23	RG	B-36-R		8-23	1930	.00	.00	
7-27	.65	.04		1920	.00	.00		1940	T	T	
7-29	.06	.00		1926	.70	.07		1945	2.54	.11	
8-2	.17	.00		1934	.00	.07		1947	5.48	.24	
				1937	1.80	.16		1948	4.41	.32	
8-4	.51	.07		1942	3.60	.46		1951	5.29	.56	
8-10	.13	.00		1945	6.00	.76		1955	3.49	.86	
8-11	.03	.00		1953	4.65	1.38		1957	1.67	.94	
8-15	.05	.00		1958	2.28	1.57		2001	2.24	1.07	
8-22	.06	.00		2002	3.00	1.77		2003	2.29	1.15	
8-23	7/.58	.00		2010	.60	1.85		2005	1.34	1.21	
				2015	.12	1.86		2010	.39	1.28E	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.670. FOR MAP OF AREA, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.8-3. 7/ RAINFALL FROM 0100 TO 0420 - 0.53 AND 0625 TO 0655 - 0.05, PRIOR TO SELECTED EVENT.

1962			SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA			WATERSHED 4-H			44.8	
ANTECEDENT CONOITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (in/hr)	ACC. (inches)			
Event of August 23, 1962 (Continued)													
Watershed conditions: Watershed in fallow; ground worked with subtiller and treader 30 days before event.							8-23	2015	.13	1.30E			
							2020	.05	1.31E				
							2030	.02	1.32E				
							2045	.01	1.32E				
							2115	.00	1.32E				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.670.



August 23, 1962

HASTINGS, NEBRASKA WATERSHED 4-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 5-H AREA—4.02 ACRES						44.9	
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 1/ P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57
STA AV3/ Q	.30E	.00	.27E	.00	.02	.29	.20	.41	.07	.06	.00	.00	1.62
(40-62) Q	.31	.52	1.09	1.94	3.50	4.60	2.95	2.61	2.52	1.19	.67	.40	22.30
	.03	.01	.17	.11	.59	1.05	.50	.24	.21	.11	.02	.00	3.04
MEAN P 4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	.69	8-23	.29	8-23	.30	8-23	.33	8-23	.34	8-23	.34	8-23	.34	8-23	.41

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962 3/	6-14	4.24	7-3	1.75	7-14	1.78	6-1	2.58	6-1	2.76	6-1	2.76	6-1	2.76	6-1	3.14
	1960	1959	1952	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951	1951

NOTES: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: Watershed in wheat in 1962, with yield of 23 bu./acre, general crop rotation has been corn (or sorghum) fallow, or wheat, using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began April 1, 1939; part-year records for 1939 and period of no record, 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebraska. 5/ No maximum discharges or flow volumes for 1957.

SLOPES: (Revision)		Slope - Percent				Soil group	
		0-3	3-7	3-10	Over 10		
	Percent of area	19	0	73	0	Holdrege silt loam	
		0	0	0	8	Holdrege silty clay loam	

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth (in.)	Permeability	
Holdrege silt loam	50	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium
Holdrege silty clay loam (severely eroded)	50	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	21	Moderate	Medium

EROSION: (Revision)		Erosion class		
		1	2	3
	Percent of area	0	50	50

LAND CAPABILITY: (Revision)		Class					
		I	II	III	IV	V	VI
	Percent of area	0	19	0	73	0	8

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

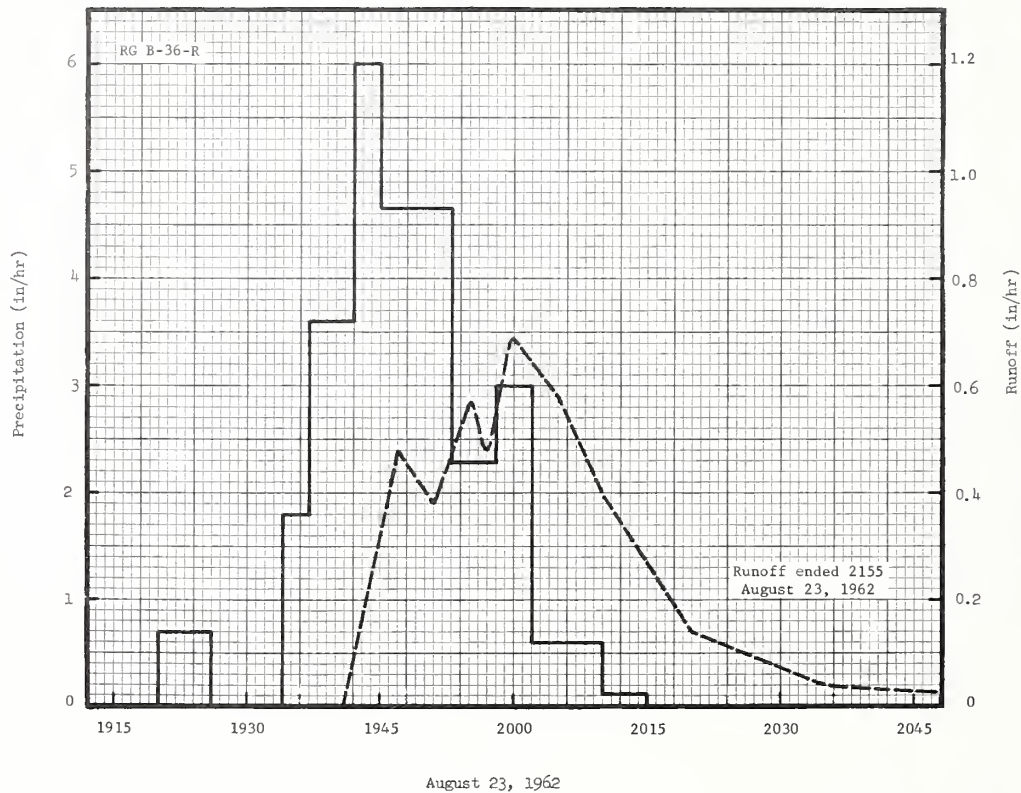
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA WATERSHED 5-H		44.9	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
Event of August 23, 1962									
7-26	RG B-36-R	.00	8-23	RG	B-36-R	.00	8-23	1935	.00
7-27	.07	.00		1920	.00	.00		1941	.00
7-29	.65	.00		1926	.70	.07		1947	.48
8-2	.06	.00		1934	.00	.07		1951	.38
	.17	.00		1937	1.80	.16		1955	.57
8-4	.51	T		1942	3.60	.46		1957	.48
8-10	.13	.00		1945	6.00	.76		2000	.69
8-11	.03	.00		1953	4.65	1.38		2005	.58
8-15	.05	.00		1958	2.28	1.57		2010	.40
8-22	.06	.00		2002	3.00	1.77		2020	.14
Continued on next page									

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.054. FOR MAP OF AREA SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.9-4.

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 5-H		44.9
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF		
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
Event of August 23, 1962 (Continued)									
8-23	1/ .58	.00	8-23	2010	.60	1.85	8-23	2035	.04
Watershed conditions: 100% wheat; combined on July 3 with a yield of 23 bu. per acre and a good residue left on the ground. Crop rotation of winter wheat, sorghum and fallow.				2015	.12	1.86		2115	.30
								2155	.30
									T
									.00

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.054. 1/ RAINFALL FROM 0100 TO 0420 - 0.53 AND FROM 0625 TO 0655 - 0.05 PRIOR TO SELECTED EVENT.



HASTINGS, NEBRASKA WATERSHED 5-H

MONTHLY PRECIPITATION AND RUNOFF (inches)							HASTINGS, NEBRASKA WATERSHED 6-H AREA—4.01 ACRES							44.10	
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962 1/ P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/ .17	2/ .40	26.57		
STA AV ³ / Q	.30E	.00	.19	.00	T	.26	.18	.32	.06	.06	.00	.00	1.37		
1962 2/ P	.31	.52	1.09	1.94	3.50	4.60	2.95	2.61	2.52	1.19	.67	.40	22.30		
(40-62) Q	.02	.02	.17	.10	.66	1.16	.56	.22	.38	.10	.04	.00	3.43		
MEAN P 4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-22	.60	8-23	.20	8-23	.21	8-23	.25	8-23	.28	8-23	.28	8-23	.28	8-23	.32

MAXIMUMS FOR PERIOD OF RECORD																
1940 to 1962 5/	5-22	5.70	7-10	1.66	6-1	2.09	6-1	2.64	6-1	2.80	7-10	2.85	7-10	2.85	7-10	3.53
	1954		1951		1951		1951		1951		1951		1951		1951	

Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed in wheat with a yield of 23 bu./acre, general crop rotation has been wheat, corn (or sorghum), and fallow, using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began April 1, 1939; part-year records for 1939 and period of no record for 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1957.

SLOPES: (Revision)	Slope - Percent				Soil group	
	0-3	3-7	3-10	Over 10		
	Percent of area					
	27	0	67	0	Holdrege silt loam	
	0	0	0	6	Peorian soil material	

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Holdrege silt loam	85	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium
Peorian soil material	15	5	Weak fine crumb	Moderate	None	None	5	Moderate	Medium

EROSION: (Revision)	Erosion class		
	1	2	3
	0	85	15

LAND CAPABILITY: (Revision)	Class					
	I	II	III	IV	V	VI
	0	0	85	0	0	15

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18, changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

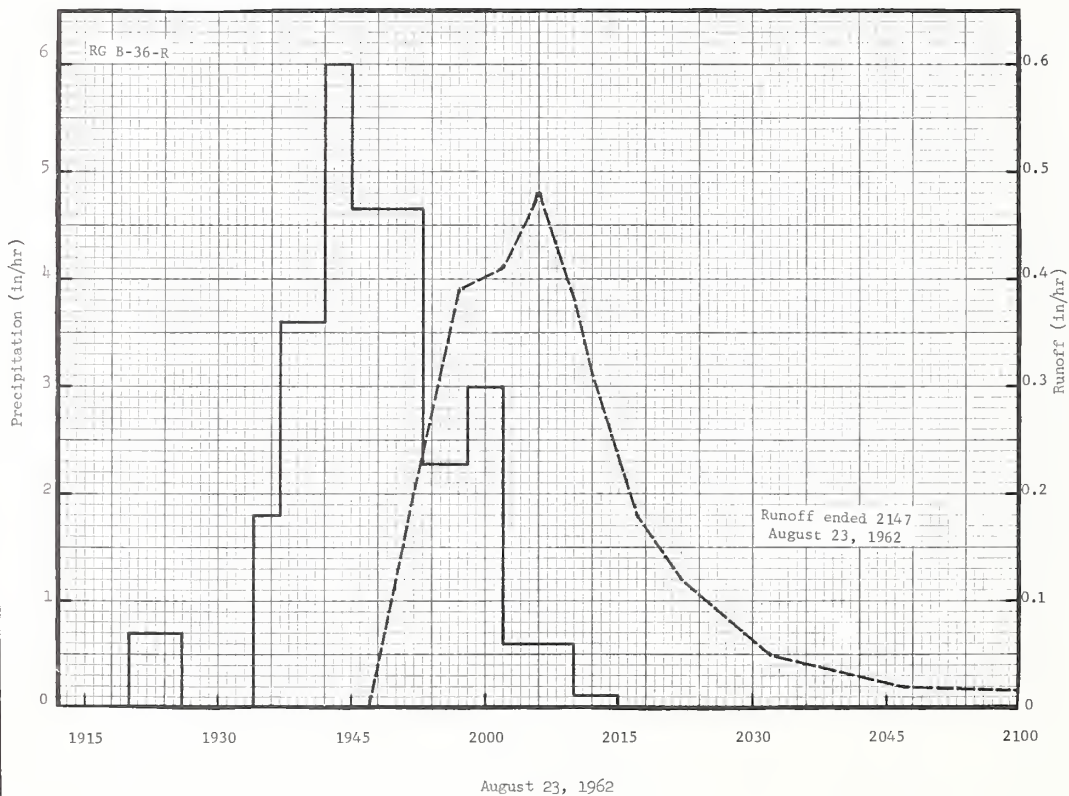
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

SELECTED RUNOFF EVENT					HASTINGS, NEBRASKA WATERSHED 6-H					44.10	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of August 23, 1962											
	RG B-36-R		8-23	RG	B-36-R		8-23	1947	.00	.00	
7-26	.07	.00		1920	.00	.00		1952	.21	.01	
7-27	.65	.00		1926	.70	.07		1957	.39	.03	
7-29	.06	.00		1934	.00	.07		2002	.41	.07	
8-2	.17	.00		1937	1.80	.16		2006	.48	.10	
8-4	.51	.00		1942	3.60	.46		2010	.38	.13	
8-10	.13	.00		1945	6.00	.76		2012	.31	.14	
8-11	.03	.00		1953	4.65	1.38		2017	.18	.16	
8-15	.05	.00		1958	2.28	1.57		2022	.12	.17	
8-22	.06	.00		2002	3.00	1.77		2032	.05	.19	

Continued on next page

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.044. FOR MAP OF AREA SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.10-1.

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA			WATERSHED 6-H			44.10
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF		
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
Event of August 23, 1962 (Continued)									
8-23	1/ .58	.00	8-23	2010	.60	1.85	8-23	2047	.02
				2015	.12	1.86		2117	.01
								2147	.00
Watershed conditions: 100% wheat; combined on July 3 with a yield of 23 bu. per acre and a good residue left on the ground. Crop rotation of winter wheat, sorghum and fallow.									
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.044. 1/ RAINFALL FROM 0100 TO 0420 - 0.53 AND 0625 TO 0655 - 0.05, PRIOR TO SELECTED EVENT.									



HASTINGS, NEBRASKA WATERSHED 6-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 7-H 44.11 AREA—4.26 ACRES							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 1/ P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57
Q	.18E	T	.41E	.00	.00	.07	1.09	1.31	.06E	.16	.00	.00	3.28
STA AV ² /P	.31	.52	1.09	1.94	3.50	4.60	2.95	2.61	2.52	1.19	.67	.40	22.30
(40-62) Q	.02	.03	.16	.11	.61	.86	.47	.16	.39	.10	.03	.00	2.94
MEAN P ⁴ /70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	2.96	8-23	.85	8-23	.85	8-23	.96	8-23	.96	8-23	.96	8-23	.96	8-23	1.30

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962 3/	5-22	4.76	7-3	2.04	7-3	2.06	7-3	2.06	7-3	2.06	7-3	2.06	7-10	2.25	3-26	3.42
	1954		1959		1959		1959		1959		1959		1951		1960	

Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: Watershed in fallow in 1962; general crop rotation has been fallow, wheat and corn (or sorghum), using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began April 1, 1939; part-year records for 1939 and period of no records for 1957, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1957.

SLOPES: (Revision)		Slope - Percent				Soil group	
		0-3	3-7	3-10	Over 10		
		25	0	71	0		Holdrege silt loam
		0	0	0	4		Peorian soil material

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Holdrege silt loam	80	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium
Peorian soil material	20	5	Weak fine crumb	Moderate	None	None	5	Moderate	Medium

EROSION: (Revision)		Erosion class		
		1	2	3
		0	80	20

LAND CAPABILITY: (Revision)		Class					
		I	II	III	IV	V	VI
		0	0	80	0	0	20

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18, changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

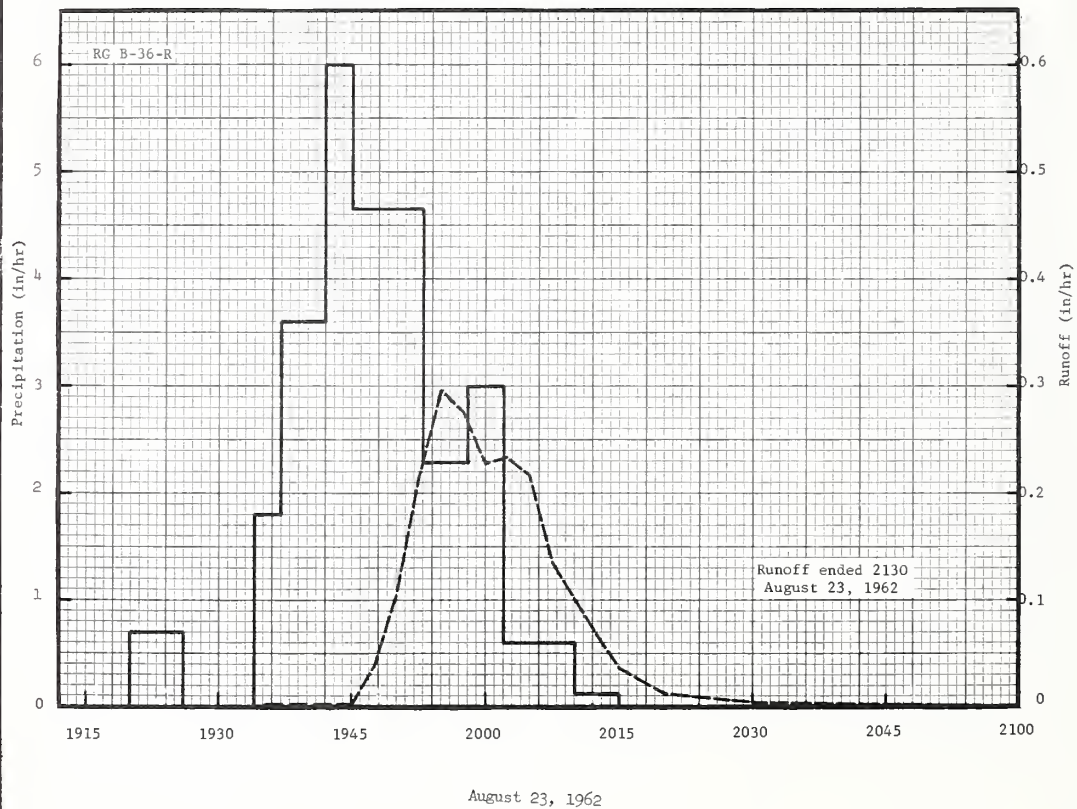
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

SELECTED RUNOFF EVENT				HASTINGS, NEBRASKA WATERSHED 7-H 44.11						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23, 1962										
	RG B-36-R		8-23	RG	B-36-R		8-23	1935	.00	.00
7-26	.07	.00		1920	.00	.00		1945	.01	.00 T
7-27	.65	.01		1926	.70	.07		1947½	.37	.01
7-29	.06	.00		1934	.00	.07		1950	1.05	.04
8-2	.17	.00		1937	1.80	.16		1952½	2.17	.11
8-4	.51	.02		1942	3.60	.46		1955	2.96	.22
8-10	.13	.00		1945	6.00	.76		1957½	2.77	.34
8-11	.03	.00		1953	4.65	1.38		2000	2.28	.44
8-15	.05	.00		1958	2.28	1.57		2002½	2.34	.54
8-22	.06	.00		2002	3.00	1.77		2005	2.17	.63

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.296. FOR MAP OF AREA SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.11-4.

1962 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 7-H				44.11
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of August 23, 1962 (Continued)											
8-23	1/ .58	.00	8-23	2010	.60	1.85	8-23	2007½	1.36	.71	
Watershed conditions: 100% fallow; Ground worked with sub tiller and treader July 27. Crop rotation of fallow, winter wheat and sorghum.						1.86		2010	1.01	.76	
								2012½	.68	.79	
								2015	.37	.81	
								2020	.12	.84	
								2030	.03	.85	
								2100	T	.85	
							2130	.00	.85		
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.296. 1/ RAINFALL FROM 0100 TO 0420 - 0.53 AND FROM 0625 TO 0655 - 0.05, PRIOR TO SELECTED EVENT.											

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.296. 1/ RAINFALL FROM 0100 TO 0420 - 0.53 AND FROM 0625 TO 0655 - 0.05, PRIOR TO SELECTED EVENT.



HASTINGS, NEBRASKA WATERSHED 7-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 8-H AREA—3.97 ACRES										44.12
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 1/P	.38	.61	1.80	.46	2.97	4.47	5.65	4.88	2.83	1.95	2/.17	2/.40	26.57			
Q	.15E	.00	.10	.00	.00	.03	.34	.30	.10	.08	.00	.00	1.10			
STA AV3/P	.31	.56	1.17	2.06	3.69	4.66	3.08	2.77	2.48	1.26	.74	.43	23.21			
(40-62) Q	.01	.01	.11	.04	.40	.70	.37	.09	.18	.05	.00	.00	1.96			
MEAN P 4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79			

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	8-23	.40	8-23	.19	8-23	.22	7-16	.27	7-16	.27	7-16	.27	7-16	.29	7-11	.34

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1962 3/	6-10 1943	3.66	7-3 1959	1.67	7-3 1959	1.70	6-1 1951	2.35	6-1 1951	2.46	6-1 1951	2.46	6-1 1951	2.46	6-1 1951	2.78

NOTES: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: Watershed in sorghum in 1962 with a yield of 55 bu./acre: general crop rotation has been corn (or sorghum), fallow and wheat, using minimum tillage practices. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological station records. 3/ Station records began April 1, 1939; part-year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 70-yr. (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebraska. 5/ No maximum discharges or flow volumes for 1955-57.

SLOPES: (Revision)

Slope - Percent	0-3	3-7	3-10	Over 10
Percent of area	41	59	0	0

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Holdrege silt loam	100	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium

EROSION: (Revision)

Erosion class	1	2	3
Percent of area	0	100	0

LAND CAPABILITY: (Revision)

Class	I	II	III	IV	V	VI
Percent of area	0	0	100	0	0	0

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16 and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

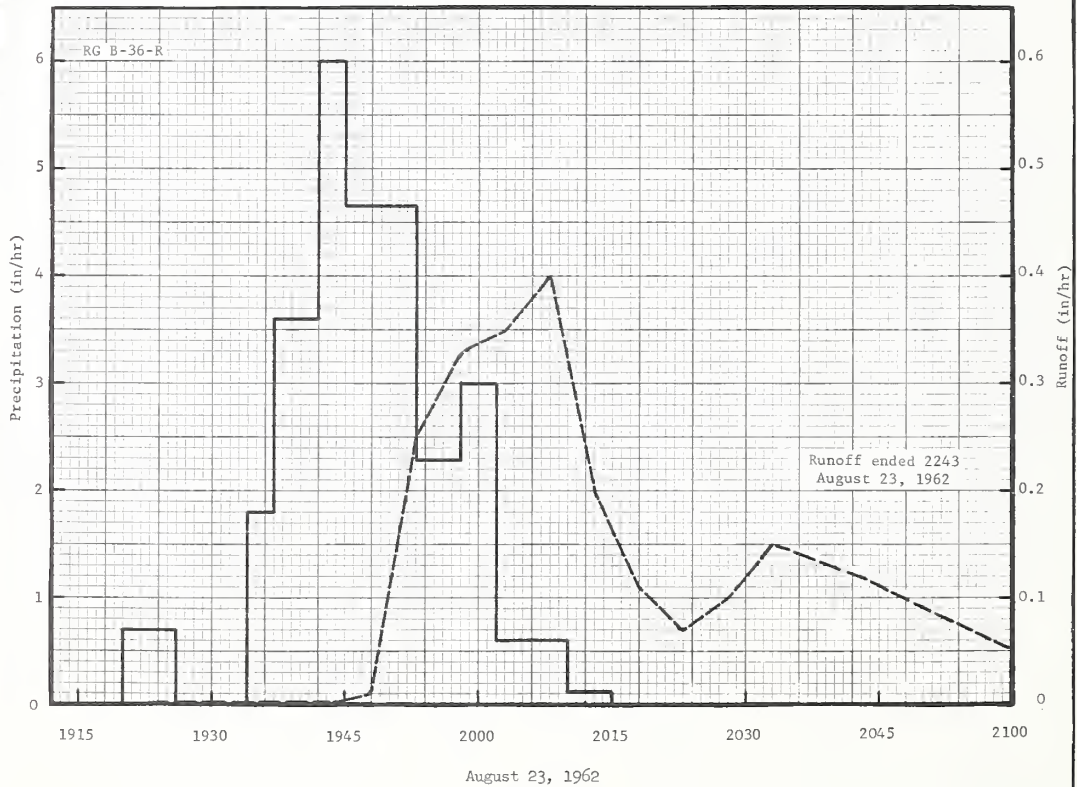
1962 SELECTED RUNOFF EVENT				HASTINGS, NEBRASKA WATERSHED 8-H								44.12
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
			Event of August 23, 1962									
	RG B-36-R		8-23	RG	B-36-R		8-23	1923	.00	.00		
7-26	.07	.00		1920	.00	.00		1933	T	T		
7-27	.65	.01		1926	.70	.07		1943	T	T		
7-29	.06	.00		1934	.00	.07		1948	.01	.01		
8-2	.17	.00		1937	1.80	.16		1953	.25	.04		
8-4	.51	.01		1942	3.60	.46		1958	.33	.07		
8-10	.13	.00		1945	6.00	.76		2003	.35	.10		
8-11	.03	.00		1953	4.65	1.38		2008	.40	.12		
8-15	.05	.00		1958	2.28	1.57		2013	.20	.14		
8-22	.06	.00		2002	3.00	1.77		2018	.11	.14		
8-23	6/ .58	.00	Continued on next page				Continued on next page					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.003. FOR MAP OF AREA SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.12-4. 6/ RAINFALL FROM 0100 TO 0420 - 0.53 AND FROM 0625 TO 0655 - 0.05 PRIOR TO SELECTED EVENT.

1962			SELECTED RUNOFF EVENT				HASTINGS, NEBRASKA				WATERSHED 8-H		44.12					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF											
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)								
Watershed conditions: 100% sorghum, about 5 feet high, heads well filled, cultivated on June 29; crop rotation of sorghum, fallow and winter wheat.			Event of August 23, 1962 (continued)				8-23		2023 2028 2033 2043 2053 2103 2113 2123 2133 2153 2223 2243		.07 .10 .15 .12 .08 .04 .03 .02 .01 T T .00		.15 .16 .18 .20 .21 .21 .22 .22 .22 .22 .23 .23					
			8-23		2010										.60		1.85	
					2015										.12		1.86	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.003.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.003.



HASTINGS, NEBRASKA WATERSHED 8-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA		WATERSHED 18-H		44.22			
						AREA—3.74 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 1/ P	.39	.59	1.85	.51	3.04	4.54	5.55	4.78	2.62	1.78	2/ .17	2/ .40	26.22
Q	.20E	.00	.12E	.00	.01	.06	.48	.36	.01	.06	.00	.00	1.30
STA AV3/ P	.29	.54	1.19	2.17	4.02	5.12	3.01	3.00	2.49	1.28	.75	.44	24.30
(40-62) Q	.02	.03	.05	.06	.41	.95	.35	.16	.15	.06	.02	.00	2.26
MEAN P 4/	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79
70-YR													

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1962	8-23	.71	8-23	.29	8-23	.30	8-23	.30	8-23	.30	8-23	.30	8-23	.30	7-11	.46

MAXIMUMS FOR PERIOD OF RECORD														
1940 TO 1962	7-3 1959	7-3 1959	7-3 1959	7-3 1959	6-1 1951	2-58 1957	6-15 1957	6-15 1957	6-15 1957	6-15 1957	6-15 1957	6-15 1957	6-10 1957	3-58
2.42	2.01E	2.05E	2.58	2.71	2.81	3.57	3.58							

Notes: Quality of records: Monthly P and Q, excellent, except Jan. 1 to Apr. 1, which are good. Watershed conditions: 100% pasture consists of 49% buffalo grass; 17% blue grama; 5% bluegrass; 2% western wheatgrass and 27% weeds and annuals. 1/ Months of Jan., Feb., Mar., Apr., and Dec. may include snow and snow melt. 2/ Based on meteorological records. 3/ Station records began Aug. 1, 1939; part year records for 1939, 1955, and no records for 1956, not included in station averages. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ No maximum discharges or flow volumes for 1955 and 1956.

SLOPES: (Revision) Slope - Percent 0-3 3-7 3-10 Over 10
Percent of area 16 80 0 4

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Holdrege silt loam	100	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium

EROSION: (Revision) Erosion class 1 2 3
Percent of area 100 0 0

LAND CAPABILITY: (Revision) Class I II III IV V VI
Percent of area 0 16 0 80 0 4

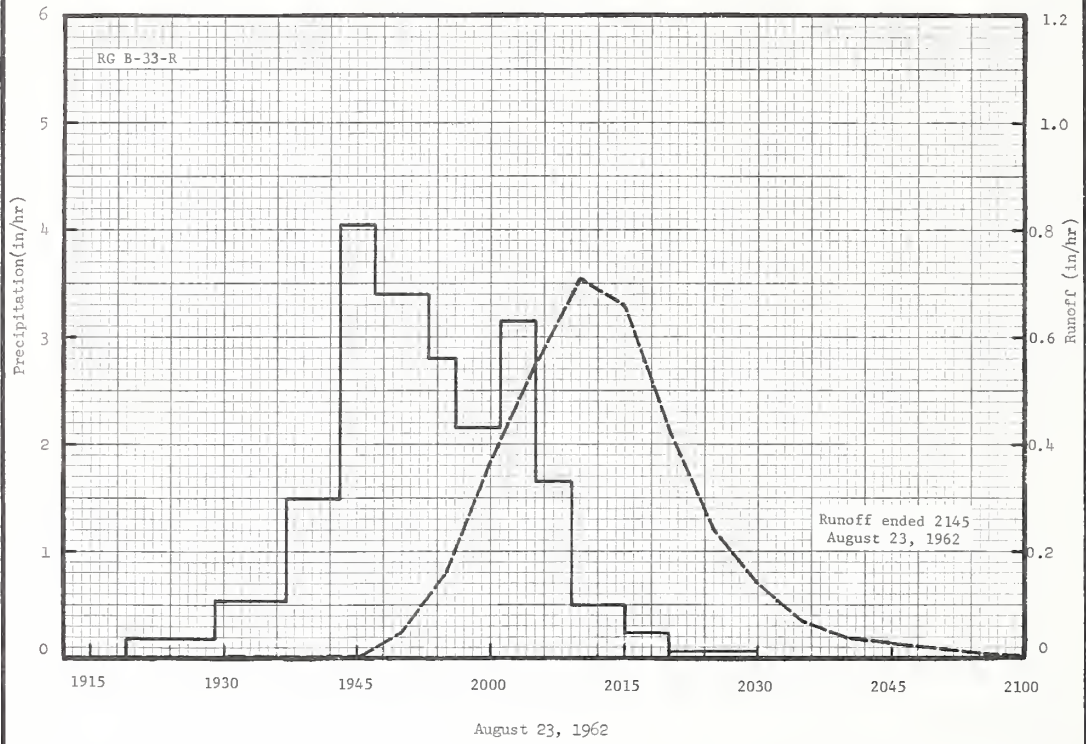
GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

1962 SELECTED RUNOFF EVENT				HASTINGS, NEBRASKA		WATERSHED 18-H		44.22		
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
	RG B-33-R		Event of August 23, 1962							
			8-23	RG	B-33-R		8-23	1930	.00	.00
7-26	.06	.00		1919	.00	.00		1945	T	T
7-27	.68	.05		1929	.18	.03		1950	.05	T
7-29	.06	.00		1937	.53	.10		1955	.16	.01
8-2	.15	.00		1943	1.50	.25		2000	.37	.04
8-4	.59	T		1947	4.05	.52		2005	.55	.07
8-10	.11	.00		1953	3.40	.86		2010	.71	.13
8-11	.03	.00		1956	2.80	1.00		2015	.66	.18
8-15	.05	.00		2001	2.16	1.18		2020	.43	.23
8-22	.13	.00		2005	3.15	1.37		2025	.24	.26
8-23	6/ .68	.00		2009	1.65	1.46		2030	.14	.28
				2015	.50	1.51		2035	.07	.28
				2020	.24	1.53		2040	.04	.28
				2030	.06	1.54		2045	.03	.29
								2055	.01	.29
								2105	T	.29
								2125	T	.30
								2145	.00	.30

Watershed conditions: 100% native grass pasture, 4 inches high, good condition.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.771. FOR MAP OF AREA SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.22-4. 6/ RAINFALL FROM 0110 TO 0730 - 0.68 PRIOR TO SELECTED EVENT.



HASTINGS, NEBRASKA WATERSHED 18-R

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 22-H AREA—3.83 ACRES								44.26
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962 P 1/						4.60	5.53	5.70	2.83	1.96	.17	.40		
Q 2/						.05	.42	1.18	.02	.08	.00	.00		
STA AV3/P	.27	.54	.89	2.33	3.47	5.01	3.11	2.64	2.32	1.34	.78	.49	23.19	
(41-54) Q	.00	.02	.03	.06	.55	1.35	.64	.14	.23	.16	.02	.00	3.20	
NORMAL P4/	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79	
70 YR														

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962 2/	8-23	3.18	8-23	1.09	8-23	1.10	8-23	1.11	8-23	1.11	8-23	1.11	8-23	1.11	8-23	1.18

MAXIMUMS FOR PERIOD OF RECORD 5/																
1941 TO	5-22	3.31	7-10	1.46	7-14	1.84	6-1	2.94	6-1	3.22	6-1	3.22	6-1	3.22	6-1	3.80
1954	1954		1951		1952		1951		1951		1951		1951		1951	

NOTES: Quality of records: Monthly P and Q, excellent to good. Watershed conditions: Cultivated watershed from 1941 through 1954. Runoff measurements discontinued from 1955 through 1961; converted from cultivated to grass watershed by re-seeding on October 20, 1961. 1/ Rain gages: C-45-R used for June, C-40 (non-recording) used for July through October, and meteorological station for November and December. 2/ Runoff records resumed on May 23, 1962. 3/ Station average began May 1, 1941 and covers period through 1954 when watershed was cultivated. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ For period of cultivation only.

SLOPES: (Revision)		Slope - Percent				Soil group	
		0-3	3-7	3-10	Over 10		
		31	0	0	0		Geary silty clay loam
		0	0	69	0		Peorian soil material

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Geary silty clay loam (se- verely eroded)	80	5	Weak fine crumb	Moderate to moderately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	20	Moderate to moderately slow	Medium
Peorian soil material	20	5	Weak fine crumb	Moderate	Weak coarse prismatic	Moderate	5	Moderate	Medium

EROSION: (Revision)		Erosion class		
		1	2	3
		0	20	80

LAND CAPABILITY: (Revision)		Class					
		I	II	III	IV	V	VI
		0	0	20	80	0	0

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

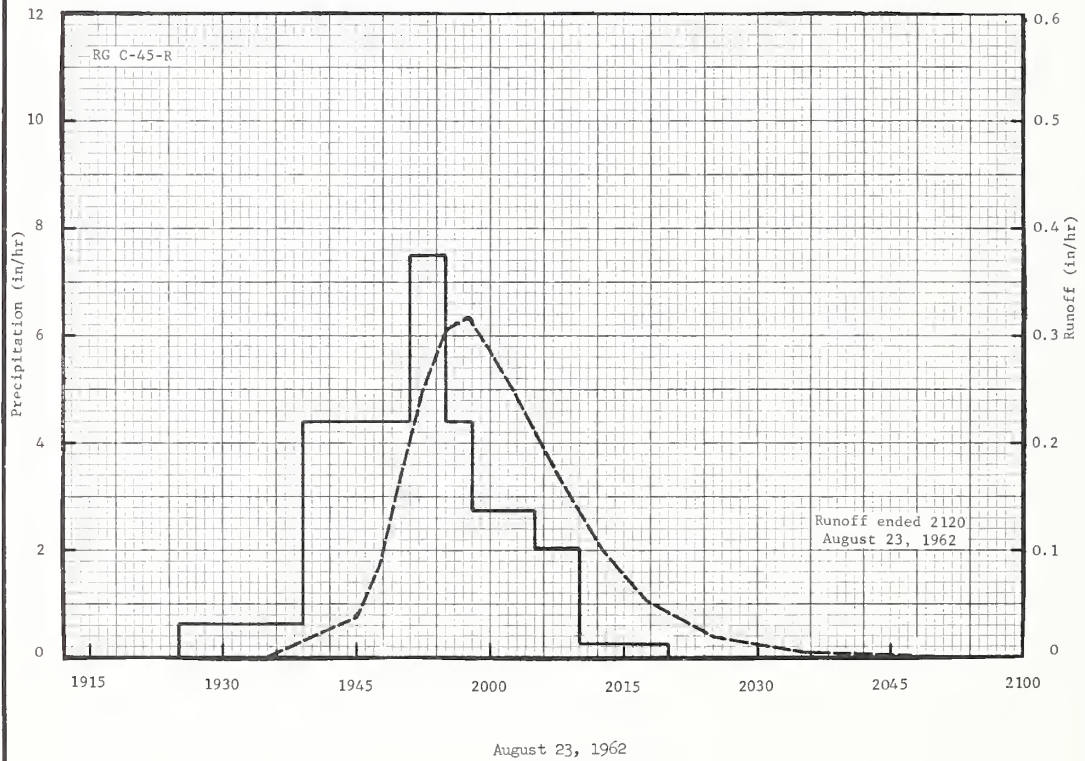
1962 SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA WATERSHED 22-H				44.26
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 23, 1962										
RG C-40 6/			8-23	RG	C-45-R		8-23	1935	.00	.00
7-26	.08	.00		1925	.00	.00		1945	.38	.02
7-27	.72	.02		1939	.64	.15		1947½	.84	.05
7-29	.05	.00		1951	4.40	1.03		1950	1.71	.10
8-2	.19	.00		1955	7.50	1.53		1952½	2.51	.19
8-4	.35	T		1958	4.40	1.75		1955	3.05	.31
8-10	.07	.00		2005	2.74	2.07		1957½	3.18	.44
8-11	.12	.00		2010	2.04	2.24		2000	2.86	.56
8-15	.04	.00		2020	.24	2.28		2002½	2.51	.68
8-23	7/ .58	.00						2005	2.11	.77

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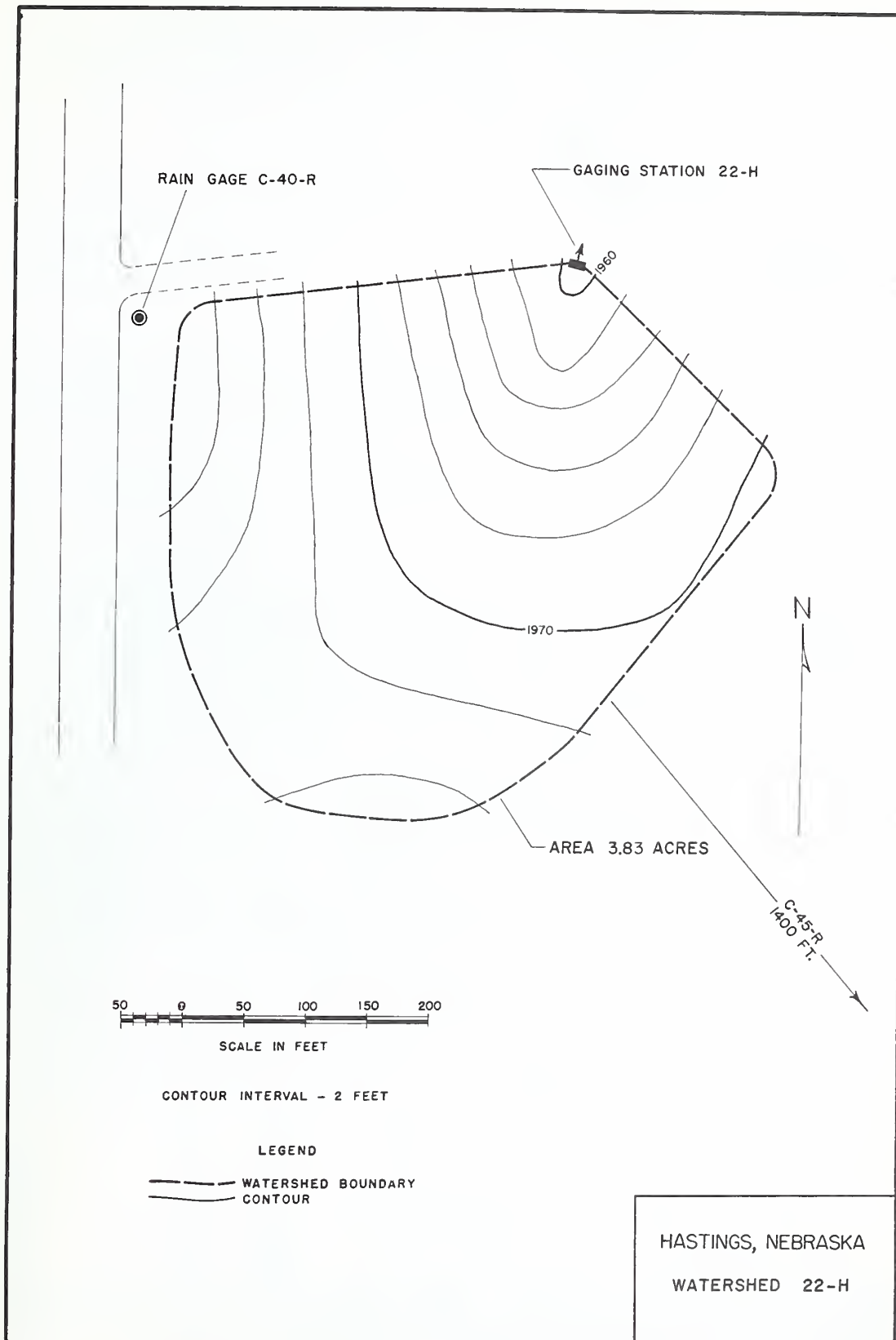
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.862. 6/ STANDARD NON-RECORDING RAIN GAGE. 7/ RAINFALL FROM 0100 TO 0410 - 0.38 AND 0540 TO 0800 - 0.09, PRIOR TO SELECTED EVENT. (FROM RECORDING RAIN GAGE C-45-R).

1962 SELECTED RUNOFF EVENTS			HASTINGS, NEBRASKA			WATERSHED 22-H			44.26
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
Event of August 23, 1962—Continued									
			8-23	RG	C-40	1/ 2.52	8-23	2007½	1.71
								2012½	1.01
								2017½	.54
								2025	.20
								2035	.05
								2050	.01
								2120	.00
Watershed conditions: 100% meadow; converted from cultivated land to meadow by re-seeding in 1961. Grass clipped to 4" height on 8-10. Good ground cover.									

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.862. 1/ STANDARD NON-RECORDING RAIN GAGE TOTAL.



HASTINGS, NEBRASKA WATERSHED 22-H



MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 23-H AREA—4.20 ACRES 44.27							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P 1/ Q 2/						4.60 .11	5.53 .66	5.70 1.24	2.83 .02	1.96 .06	.17 .00	.40 .00	
STA AV3/P (41-54) Q	.27 .00	.54 .00	.89 .02	2.33 .18	3.47 .69	5.01 1.79	3.11 .68	2.64 .22	2.32 .49	1.34 .13	.78 .03	.49 .00	23.19 4.23
NORMAL P 4/ 70 YR	.48	.79	1.18	2.28	3.37	4.27	3.19	2.68	2.61	1.42	.88	.64	23.79

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962 ^{2/}	8-23	4.21	8-23	1.46	8-23	1.46	8-23	1.46	8-23	1.50	8-23	1.50	8-23	1.50	8-23	1.61

MAXIMUMS FOR PERIOD OF RECORD 5/														
1941 to 1954	6-5 1942	6.47	6-5 1942	1.75	6-1 1951	2.22	6-1 1951	2.46	6-1 1951	2.74	6-1 1951	2.74	6-1 1951	3.44

NOTES: Quality of records: Monthly P and Q, excellent to good. Watershed conditions: Cultivated watershed from 1941 through 1954. Runoff measurements discontinued from 1955 through 1961; converted from cultivated to grass watershed by re-seeding on October 20, 1961. 1/ Rain gages: C-45-R used for June, C-40 (non-recording) used for July through October, and meteorological station for November and December. 2/ Runoff records resumed on May 23, 1962. 3/ Station averages began May 1, 1941 and covers period through 1954 when watershed was cultivated. 4/ Mean P based on 70-yr (1893-1962) U. S. Weather Bureau record period at Red Cloud, Nebr. 5/ For period of cultivation only.

SLOPES: (Revision)	Slope - Percent	0-3	3-7	3-10	Over 10	Soil group
	Percent of area	23	70	0	0	Holdrege silt loam
		0	0	7	0	Geary silty clay loam

SOILS: (Revision) Loessial; derived from gray wind blown material consisting mostly of Peorian loess.

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	
Geary silty clay loam(se- verely eroded)	55	5	Weak fine crumb	Moderate to moder- ately slow	Moderate fine to medium subangular blocky	Moderate to moderately slow	20	Moderate to moder- ately slow	Medium
Holdrege silt loam	45	12	Moderate fine to medium granular	Moderate	Moderate fine to medium subangular blocky	Moderate to moderately slow	34	Moderate	Medium

EROSION: (Revision)	Erosion class	1	2	3
	Percent of area	45	0	55

LAND CAPABILITY: (Revision)	Class	I	II	III	IV	V	VI
	Percent of area	0	45	0	55	0	0

GENERALLY REPRESENTS: (Revision) Central Nebraska-Kansas Loess Plains and Hills, problem areas D14, D15, D16, and D18 changed to following land resource areas: Central Nebraska Loess Hills (H-71), Rolling Plains and Breaks (H-73), and Central Loess Plains (H-75).

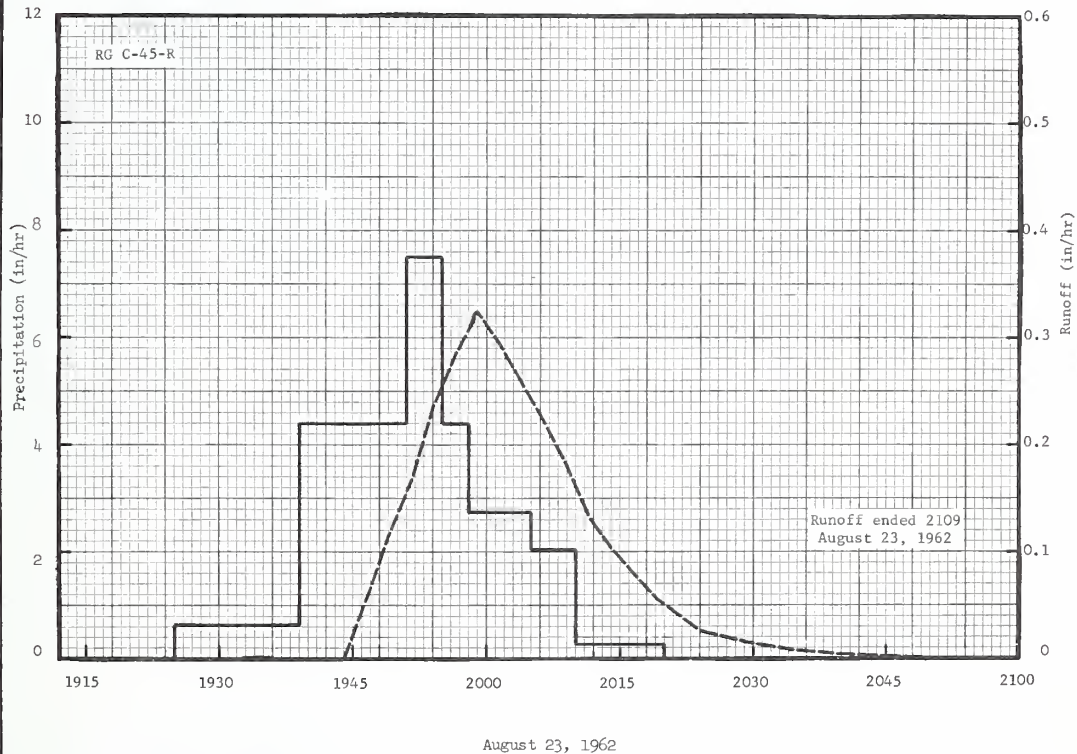
GEOLOGY: The parent material of all the soils of the watershed, except the Geary soils, is Peorian loess which ranges up to 30 feet deep. Beneath the Peorian loess, or exposed in the Geary soils, is the loessial phase of the Loveland formation, which ranges up to 90 feet deep or more. The depth of the combined deposits is believed to be never less than 20 feet. Below the Loveland, is the Ogallala formation and under this is the Niobrara chalky shale. Most of the soils have deep friable topsoils in the native conditions, usually with a silt loam texture. Source of data: U. S. Soil Conservation Service, Hydrologic Data, Central Great Plains Experimental Watershed, Hastings, Nebr., Hydrol. Bul. No. 3, 148 pp., 1942. (Former Nuckolls soils are now correlated as Geary soils).

SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA WATERSHED 23-H 44.27			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF		
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
Event of August 23, 1962									
	RG C-40-6/		8-23	RG	C-45-R		8-23	1944	.00
7-26	.08	.00		1925	.00	.00		1946 1/2	.56
7-27	.72	.05		1939	.64	.15		1949	1.15
7-29	.05	.00		1951	4.40	1.03		1951 1/2	1.67
8-2	.19	.00		1955	7.50	1.53		1954	2.36
8-4	.35	.01		1958	4.40	1.75		1956 1/2	2.86
8-10	.07	.00		2005	2.74	2.07		1959	3.24
8-11	.12	.00		2010	2.04	2.24		2001 1/2	2.93
8-15	.04	.00		2020	.24	2.28		2004	2.58
8-23	7/ .58	.00		Continued on next page				2006 1/2	2.21

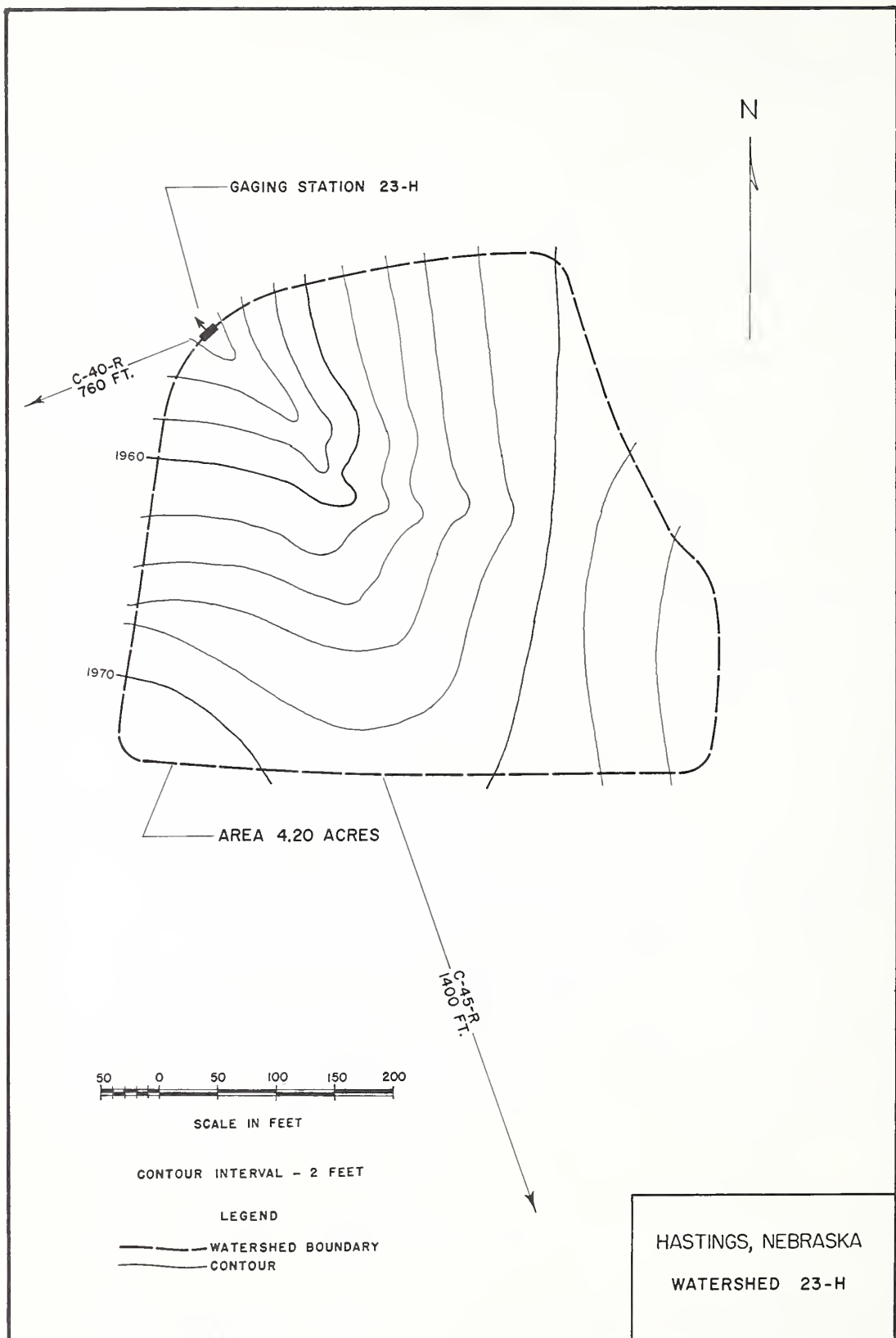
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.235. 6/ STANDARD NON-RECORDING RAIN GAGE. 7/ RAINFALL FROM 0110 TO 0410 - 0.38 AND 0540 TO 0800 - 0.09, PRIOR TO SELECTED EVENT. (FROM RECORDING RAIN GAGE C-45-R).

SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED 23-H			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Watershed conditions: 100% meadow; converted from cultivated land to meadow by re-seeding in 1961. Grass clipped to 4" height on 8-10; good ground cover.			Event of August 23, 1962 continued							
			8-23	RG	C-40	1/ 2.52	8-23	2009	1.81	.86
								2011 $\frac{1}{2}$	1.34	.92
								2014	1.03	.98
								2016 $\frac{1}{2}$	.80	1.02
								2019	.58	1.05
								2024	.27	1.08
								2029	.16	1.10
								2034	.09	1.11
								2039	.04	1.12
								2049	.01	1.12
								2059	T	1.12
								2109	.00	1.12

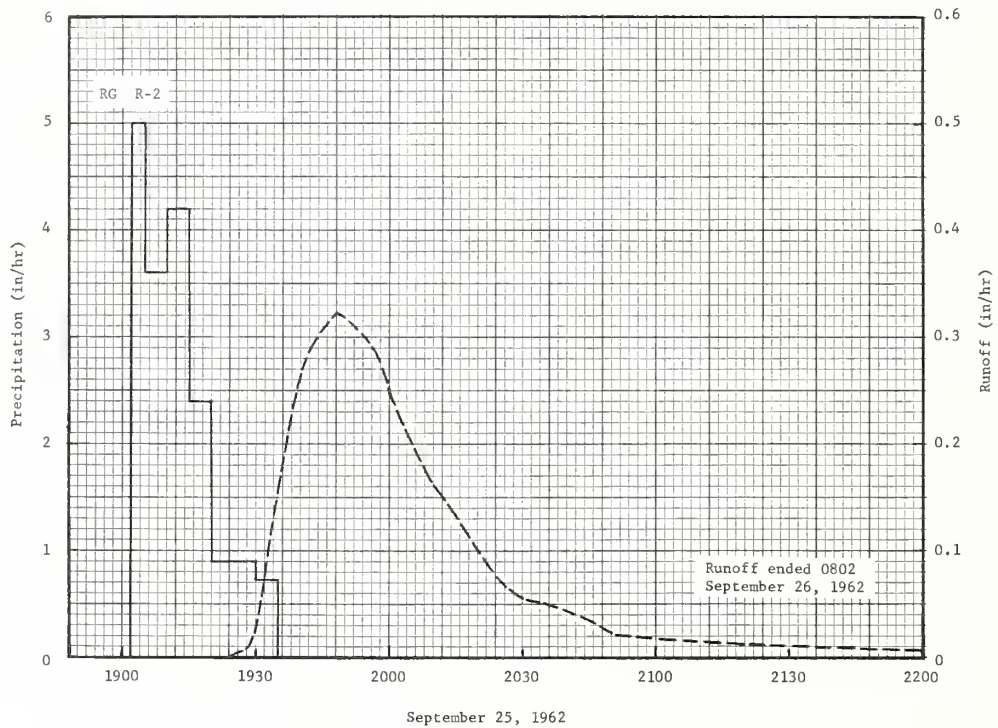
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.235. 1/ STANDARD NON-RECORDING RAIN GAGE TOTAL.



HASTINGS, NEBRASKA WATERSHED 23-H



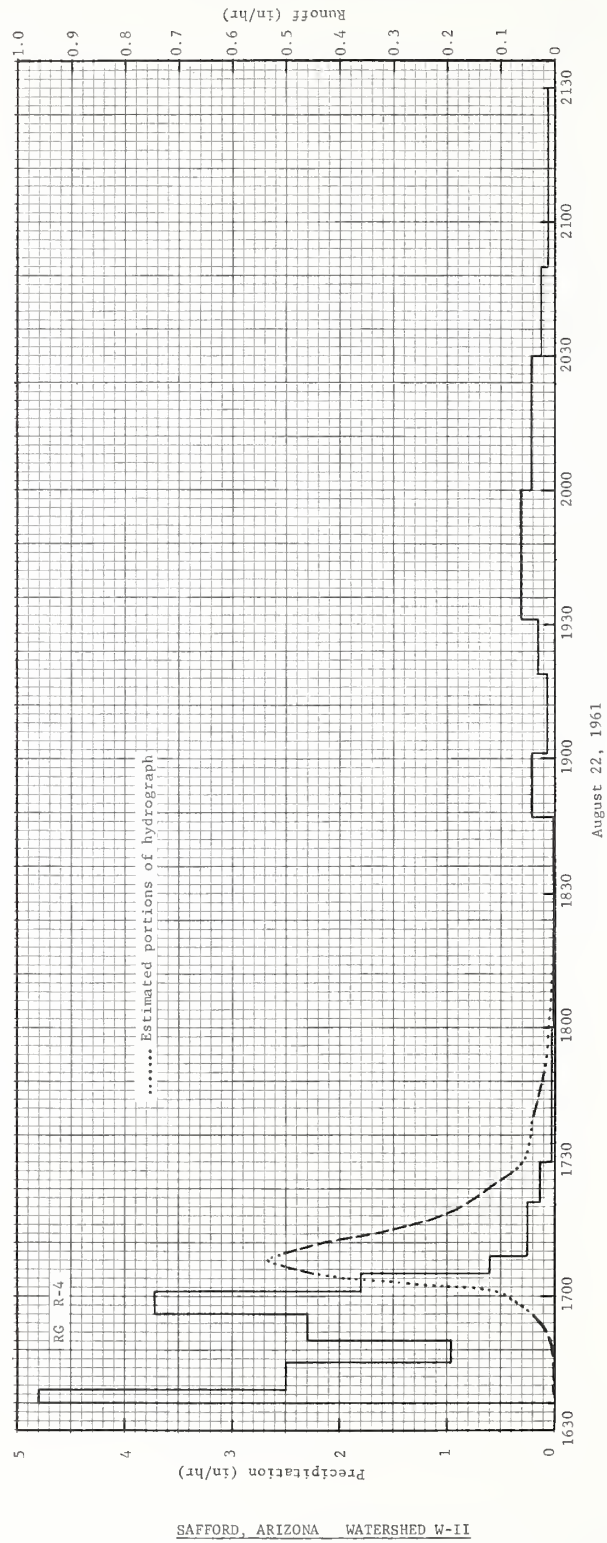
MONTHLY PRECIPITATION AND RUNOFF (Inches)								SAFFORD, ARIZONA WATERSHED W-I AREA—519 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.77 .00	.00 .00	.37 .00	.00 .00	.03 .00	.04 .00	.26 .00	.00 .00	4.25 .71	.70 .01	.66 .00	.45 .00	7.53 .72			
STA AV 2/ P (41-62) Q	.56 .00	.36 .00	.42 .00	.24 T	.07 .00	.22 T	1.37 .07	1.62 .16	1.01 .12	.55 T	.27 .00	.44 .00	7.13 .35			
MEAN P 3/ 63 YR	.66	.69	.64	.30	.14	.28	1.75	1.63	.98	.65	.58	.71	9.01			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								SAFFORD, ARIZONA WATERSHED W-I								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-25	.3228	9-25	.19	9-25	.21	9-26	.40	9-26	.49	9-25	.71	9-25	.71	9-25	.71
MAXIMUMS FOR PERIOD OF RECORD																
1941 to 1962	9-5 1944	.83	9-5 1944	.61	9-5 1944	.71	9-5 1944	.73	9-5 1944	.73	9-5 1944	.73	9-5 1944	.73	9-5 1944	.73
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Sparsely vegetated rangeland. 1/ Thiessen weighted, using 3 rain gages. 2/ Precipitation records began Jan. 1939; runoff records, June 1939. Incomplete P and Q records for 1939 and 1940 not included in averages. 3/ Mean P based on 63-yr (1899-1961) U. S. Weather Bureau record period at Safford, Ariz.																
GENERALLY REPRESENTS: (Revision) Sonoran Highlands problem area changed to <u>Southern Desertic Basins, Plains and Mountains</u> land resource area (D-42).																
1962 SELECTED RUNOFF EVENT								SAFFORD, ARIZONA WATERSHED W-I								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of September 25-26, 1962																
9-4-62	RG R-1 .40	.0000	9-25-62	RG R-2 .00	.00	9-25-62	.0000	.0000								
9-6	.15	.0000	1902	5.00	.25	1924	.0017	.0001								
9-8	.08	.0000	1905	3.60	.55	1925	.0059	.0001								
9-11	.03	.0000	1910	4.20	.90	1926	.0083	.0003								
			1915			1928										
9-13	.40	.0000	1920	2.40	1.10	1929	.0152	.0005								
9-24	.10	.0000	1930	.90	1.25	1930	.0283	.0009								
			1935	.72	1.31	1931	.0577	.0016								
			9-25-62	RG R-1 4/	1.19	1932	.0772	.0027								
						1933	.1094	.0043								
						1934	.1306	.0063								
9-4-62	RG R-2 .20	.0000				1935	.1560	.0087								
9-6	.10	.0000				1936	.1793	.0115								
9-8	.07	.0000				1937	.2082	.0147								
9-11	.03	.0000				1938	.2273	.0183								
9-13	.29	.0000				1939	.2502	.0223								
9-24	.21	.0000				1940	.2655	.0266								
						1942	.2884	.0358								
						1948	.3228	.0664								
						1957	.2884	.1122								
						2000	.2483	.1256								
9-4-62	RG R-3 .13	.0000				2005	.2025	.1451								
9-6	.15	.0000				2010	.1600	.1602								
9-8	.06	.0000				2015	.1346	.1725								
9-11	.02	.0000				2020	.1003	.1823								
9-13	.39	.0000				2025	.0718	.1895								
9-24	.25	.0000				2030	.0542	.1947								
						2035	.0514	.1991								
						2050	.0220	.2083								
Watershed conditions: 85% of area is bare. Sparse vegetation is pre-dominantly shrubs (creosotebush, snakeweed, and catclaw), with some short grasses (tobosa, three-awn, and curly mesquite).																
9-26-62																
						0802	.0000	.2273								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 523.32. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 45.1-4 (REPRINTED). 4/ RAIN GAGE R-1 (WEEKLY CHART) HAD HIGH INTENSITY PRECIPITATION WHICH CONTRIBUTED GREATLY TO THE RUNOFF.																



SAFFORD, ARIZONA WATERSHED W-1

(1960-61 Data) 45.2-1 (Revision)

REVISION OF PREVIOUSLY PUBLISHED GRAPH



MONTHLY PRECIPITATION AND RUNOFF (Inches)								SAFFORD, ARIZONA WATERSHED W-II AREA—682 ACRES (1.07 SQ. MILES)								
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1961	P	1.32	.00	.30	.00	.00	.48	1.04	2.46	.24	1.39	2.80	2.41	12.44		
	Q 1/	.00	.00	.00	.00	.00	.00	.02	.16	.00	.05	T	.00	.23		
1962	P 2/	.58	.15	.58	.00	.00	.20	2.39	.02	3.31	.63	.25	.32	8.43		
	Q	.00	.00	.00	.00	.00	.00	T	.00	.03	.00	.00	.00	.03		
STA AV	3/P	.80	.53	.79	.35	.16	.30	2.18	2.20	1.04	.83	.48	.74	10.40		
(41-62)	Q	.00	.00	.00	.00	.00	.00	.09	.18	.06	.01	.00	.00	.34		
MEAN P	4/	.66	.69	.64	.30	.14	.28	1.75	1.63	.98	.65	.58	.71	9.01		
63 YR																
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								SAFFORD, ARIZONA WATERSHED W-II								
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	
1961 1/	8-22	.5336E	8-22	.15E	8-22	.16E	8-22	.16E	8-22	.16E	8-22	.16E	8-22	.16E	8-22	.16E
1962	9-24	.0442	9-24	.03	9-24	.03	9-24	.03	9-24	.03	9-24	.03	9-24	.03	9-24	.03
MAXIMUMS FOR PERIOD OF RECORD																
1939 to	9-28	1.45	9-28	.65	9-28	.68	9-28	.78	9-28	.81	9-28	.91	9-28	.91	9-28	.91
1962 5/	1941		1941		1941		1941		1941		1941		1941		1941	
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: Sparsely vegetated rangeland. About 75% of area is bare. Vegetative cover is about equally divided between short grasses (black, hairy and side-oats grama) and shrubs (creosotebush, beargrass and mesquite). 1/ Revisions of previously published data, reduced values underlined. 2/ Thiessen weighted, using 3 rain gages. 3/ Precipitation and runoff records began Jan. 1939. Incomplete records for 1939 and 1940 not included in averages. 4/ Mean P based on 63-yr (1899-1961) U.S. Weather Bureau record period at Safford, Ariz. 5/ No maximums for 1950, 1958, and 1960.																
GENERALLY REPRESENTS: (Revision) Sonoran Highlands problem area changed to <u>Southeastern Arizona Basin and Range land resource area (D-41)</u> .																
NO SUITABLE 1962 SELECTED RUNOFF EVENT TO REPORT. FOR WATERSHED MAP, SEE P. 45.2-5 OF SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960.																

Cooperative Research Project of USDA and Arizona Agricultural Experiment Station

45.2-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								SAFFORD, ARIZONA WATERSHED W-IV AREA—764 ACRES (1.19 SQ. MILES)								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/	1.30 .00	.01 .00	.31 .00	.00 .00	.00 .00	.21 .00	.38 .00	.00 .00	2.48 .04	.98 .00	.51 .00	.65 .00	6.83 .04			
STA AV 2/ P (42-62) Q	.70 .00	.38 .00	.46 .00	.17 .00	.06 .00	.43 .01	1.67 .02	1.84 .07	.88 .04	.59 .00	.36 .00	.54 .00	8.08 .14			
MEAN P 3/ 63 YR	.66	.69	.64	.30	.14	.28	1.75	1.63	.98	.65	.58	.71	9.01			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								SAFFORD, ARIZONA WATERSHED W-IV								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-26	.0439	9-26	.04	9-26	.04	9-26	.04	9-26	.04	9-26	.04	9-26	.04	9-26	.04
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	8-16 1958	.66	8-16 1958	.33	8-16 1958	.37	8-16 1958	.37	8-16 1958	.37	8-16 1958	.37	8-16 1958	.37	8-16 1958	.37
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: 80% of area is bare. Sparse vegetation is composed entirely of shrubs (creosotebush, snakeweed, cactus, and mesquite) except for trace of short grasses. 1/ Thiessen weighted, using 3 rain gages. 2/ Precipitation records began Jan. 1939. Runoff records began July 1939. Part-year amounts for 1939, 1940, and 1941 not included in averages. 3/ Mean P based on 63-yr (1899-1961) U. S. Weather Bureau record period at Safford, Ariz. 4/ No maximums for 1961 (instrument malfunctioned).																
GENERALLY REPRESENTS: (Revision) Sonoran Highlands problem area changed to <u>Southeastern Arizona Basin and Range land resource area (D-41)</u> .																
NO SUITABLE 1962 SELECTED RUNOFF EVENT TO REPORT. FOR WATERSHED MAP, SEE P. 45.3-4 OF HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994 (REPRINTED).																

Cooperative Research Project of USDA and Arizona Agricultural Experiment Station
(See 45.2-1 above).

45.3-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)									SAFFORD, ARIZONA WATERSHED W-V AREA—723 ACRES (1.13 SQ. MILES)							
Year	Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1962	P 1/ Q	1.57 .00	.15 .00	.31 .00	.08 .00	.08 .00	.43 .00	2.08 T	.11 .00	1.59 .00	.70 .00	.75 .00	.56 .00	8.41 T		
STA. AV. 2/ (42-62)	P Q	.86 .00	.54 .00	.61 .00	.24 .00	.10 .00	.43 T	2.24 .08	2.09 .14	.86 .03	.77 .01	.41 .00	.68 .00	9.83 .26		
MEAN P 3/ 63 YR		.66	.69	.64	.30	.14	.28	1.75	1.63	.98	.65	.58	.71	9.01		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS									SAFFORD, ARIZONA WATERSHED W-V							
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	7-23	.0025	7-23	.002	7-23	.002	7-23	.002	7-23	.002	7-23	.002	7-23	.002	7-23	.002
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962	7-22 1955	.92	7-22 1955	.36	7-22 1955	.38	7-22 1955	.38	7-22 1955	.38	7-22 1955	.38	7-22 1955	.40	7-22 1955	.71
Notes: Quality of records: Monthly P and Q, excellent; annual maximum discharges and volumes, excellent. Watershed conditions: About 80% of area is bare. Vegetation consists mostly of short grasses (black grama, side-oats grama, and tabosa), with some shrubs and forbs. 1/ Thiessen weighted, using 4 rain gages. 2/ Precipitation and runoff records began Jan. 1939. Part-year amounts for 1939, 1940, and 1941 not included in averages. 3/ Mean P based on 63-yr. (1899-1961) U. S. Weather Bureau record period at Safford, Ariz.																
GENERALLY REPRESENTS: (Revision) Sonoran Highlands problem area changed to <u>Southeastern Arizona Basin and Range</u> land resource area (D-41).																
NO 1962 SELECTED RUNOFF EVENT PRESENTED BECAUSE THERE WAS ONLY A TRACE OF RUNOFF. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE P. 45.4-4 OF HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945.																

MONTHLY PRECIPITATION AND RUNOFF (Inches)								ALBUQUERQUE, NEW MEXICO WATERSHED W-I AREA-97.2 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.68 .00	.00 .00	.00 .00	.00 .00	.00 .00	.09 .00	1.17 .09	.05 .00	1.56 .00	.66 .00	.30 .00	.39 .00	4.90 .09			
STA AV 2/ P (40-62) Q	.30 .00	.31 .00	.37 .00	.36 T	.50 T	.70 .04	1.02 .06	1.37 .12	.86 .10	.74 .04	.30 T	.40 .00	7.23 .36			
MEAN P 3/ 70 YR	.36	.33	.39	.58	.67	.58	1.41	1.27	.88	.80	.43	.45	8.15			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								ALBUQUERQUE, NEW MEXICO WATERSHED W-I								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	7-23	.5641	7-23	.0769	7-23	.0883	7-23	.0883	7-23	.0883	7-23	.0883	7-23	.0883	7-23	.0883
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	8-24 1957	2.33	8-24 1957	.57	8-24 1957	.62	8-24 1957	.62	8-24 1957	.62	8-24 1957	.62	8-24 1957	.62	9-8 1947	.77
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volume, good. Watershed conditions: Rough broken rangeland. About 85% of area is bare. Sparse vegetation consists of short grasses (blue and black grama), shrubs, and a few small juniper and pinon trees. 1/ Thiessen weighted, using 2 rain gages. 2/ Precipitation and runoff records began Aug. 1939. Part-year amounts for 1939 not included in averages. 3/ Mean P based on 70-yr. (1892-1961) U. S. Weather Bureau record period at Albuquerque, N. Mex. 4/ No maximums for 1945.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 47.1-4.																

Cooperative Research Project of USDA and New Mexico Agricultural Experiment Station

47.1-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)								ALBUQUERQUE, NEW MEXICO WATERSHED W-II AREA—40.5 ACRES								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.71 .00	.00 .00	.00 .00	.00 .00	.05 .00	.04 .00	.79 .00	.04 .00	1.67 .00	.72 .00	.36 .00	.49 .00	4.87 .00			
STA AV 2/ P (41-62) Q	.27 .00	.24 .00	.37 .00	.37 T	.50 .01	.68 .04	1.02 .06	1.36 .18	.86 .10	.77 .03	.22 .00	.31 .00	6.97 .42			
MEAN P 3/ 70 YR	.36	.33	.39	.58	.67	.58	1.41	1.27	.88	.80	.43	.45	8.15			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								ALBUQUERQUE, NEW MEXICO WATERSHED W-II								
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962		.00		.00		.00		.00		.00		.00		.00		
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 4/	8-24 1957	2.79	8-24 1957	.73	8-24 1957	.77	8-24 1957	.79	8-24 1957	.79	8-24 1957	.79	8-24 1957	.79	9-4 1947	1.06
Notes: Quality of records: Monthly P and Q good; annual maximum discharges and volumes, good. Watershed conditions: Sparsely vegetated rangeland. 80% of area is bare. Vegetation consists of short grasses (blue and black grama, and galleta) and shrubs (sagebrush, saltbush, and rabbit brush). Vegetation is densest along lower two thirds of principal waterway. 1/ Thiessen weighted, using 2 rain gages. 2/ Precipitation and runoff records began Aug. 1939. Part-year amounts for 1939 and 1940 not included in averages. 3/ Mean P based on 70-yr. (1892-1961) U.S. Weather Bureau record period at Albuquerque, N. Mex. 4/ No maximums in 1945.																
NO RUNOFF, THEREFORE NO SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 47.2-4.																

Cooperative Research Project of USDA and New Mexico Agricultural Experiment Station

(See 47.1-1 above)

47.2-1

MONTHLY PRECIPITATION AND RUNOFF (Inches)									ALBUQUERQUE, NEW MEXICO WATERSHED W-III AREA—168 ACRES							
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P ^{1/}	.68	.00	.01	.00	.02	.02	.76	.04	1.66	.78	.35	.48	4.80			
Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.08			
STA AV ^{2/} P	.29	.25	.36	.37	.51	.67	1.13	1.31	.84	.73	.22	.30	6.98			
(41-62) Q	.00	.00	.00	.00	.01	.04	.05	.10	.05	.01	.00	.00	.26			
MEAN P ^{3/} 70 YR	.36	.33	.39	.58	.67	.58	1.41	1.27	.88	.80	.43	.45	8.15			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS									ALBUQUERQUE, NEW MEXICO WATERSHED W-III							
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	10-19	.2466	10-19	.0562	10-19	.0622	10-19	.0837	10-19	.0837	10-19	.0837	10-19	.0837	10-19	.0837
MAXIMUMS FOR PERIOD OF RECORD																
1939 to 1962 ^{4/}	9-4 1947	.96	9-4 1947	.50	9-4 1947	.61	9-4 1947	.62	9-4 1947	.62	9-4 1947	.62	9-4 1947	.62	9-4 1947	.87
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: Sparsely vegetated rangeland; about 75% of area is bare. Vegetation consists of short grasses (blue and black grama and galleta) and shrubs (sagebrush, saltbush, and snakeweed). Vegetation is comparatively heavy in a narrow strip along the principal waterway. ^{1/} Thiessen weighted, using 2 rain gages. ^{2/} Precipitation and runoff records began July 1939. Part-year amounts for 1939 and 1940 not included in averages. ^{3/} Mean P based on 70-yr. (1892-1961) U. S. Weather Bureau record period at Albuquerque, N. Mex. ^{4/} No maximums for 1940, 1945, and 1960.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 47.3-4.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI AREA—2,000 ACRES (3.13 SQ. MILES)				WATERSHED W-41/ 62.01			
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P ² / _Q	5.81 1.58	7.96 3.14	3.03 .19	3.88 .62	2.18 .01	5.43 .32	4.11 .08	2.62 .07	5.83 .27	2.02 .01	1.53 .00	1.64 .00	46.04 6.29
STA AV ³ / _P (57-62) Q	4.29 .93	5.28 1.19	4.44 .55	4.39 .52	3.68 .26	4.19 .17	4.10 .16	2.75 .07	5.29 .35	2.64 .10	4.88 .58	4.56 .52	50.49 5.40
MEAN P ⁴ / _{43 YR}	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.84	2-23	.72	2-23	1.13	2-23	1.46	2-23	1.60	2-23	1.75	2-23	1.82	2-23	3.15

MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO 19 62	2-23 1962	.84	2-23 1962	.72	2-23 1962	1.13	2-23 1962	1.46	2-23 1962	1.60	1-31 1957	2.38	1-30 1957	3.34	1-27 1957	3.90

NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 22% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 42% in idle pasture, good cover April to October with fair cover remainder of year; 34% in woods; 2% in bare gullies. 1/ About 28% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 7, 8, and 18. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

SOILS: (Revision) Loess soils underlain by Coastal Plains material; soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per- cent of area	Avg. depth (in.)	Topsoil		Perme- ability	Subsoil		Substratum		Internal drainage
			Structure			Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Ruston fine sandy loam to sandy clay loam	59	0-4	Weak fine crumb		Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid
Collins silt loam	15	0-8	Weak fine granular		Moderately rapid	-----	-----	6	Moderately rapid	Rapid
Providence silt loam and silty clay loam	13	0-5	Weak, fine to medium, granular		Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow
Grenada silt loam	8	0-6	Weak, fine to medium, granular		Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Loring silt loam to silty clay loam	5	0-6	Weak, fine to medium, granular		Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid

GEOLOGY: About 64% of the surface area is occupied by the Kosciusko formation, 29% by the Tallhatta, and 7% is valley alluvium. A fault along the southern boundary of the watershed has altered the stratigraphy and piezometric slope appreciably. A normal westerly dip of about 8 to 10 feet per mile has been increased slightly and changed to a south-southeasterly direction. The slope of the ground-water gradient which occurs at depths in excess of 50 feet below the stream channel has been similarly affected. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.

SELECTED EVENT OF SEPTEMBER 9, 1959: (Revision) Rainfall graph in lower graph on page 62.1-3 in Misc. Pub. 945 for 1956-59 should have been labeled "Rain gages 7, 8, and 18 Thiessen weighted", not Rain gage 7 as shown.

TOPOGRAPHIC MAP: (Revision) Elevation of stream bed at W-4 gaging station should read 454 ft. above MSL, rather than 397 ft. as shown on map, page 62.1-4 in USDA Misc. Pub. 945 for 1956-59.

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1962 DAILY AIR TEMPERATURE (degrees F)												OXFORD, MISSISSIPPI				WATERSHED W-4				62.01				
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	40	26	69	40	37	25	48	35	85	61	84	64	88	64	90	64	90	72	80	54	61	29	73	37
2	48	22	67	29	44	29	53	31	72	44	85	64	90	66	86	69	88	71	76	51	61	30	70	37
3	62	34	74	45	48	33	47	24	74	44	84	65	90	72	79	69	90	69	74	47	64	44	72	42
4	60	40	67	48	59	42	57	28	80	47	80	66	90	75	88	72	92	71	77	48	49	36	67	38
5	58	51	58	40	50	25	68	37	82	48	77	62	92	69	93	70	92	68	80	50	53	30	66	38
6	57	24	41	20	40	24	62	50	84	54	86	63	95	70	93	73	80	60	84	60	53	27	49	26
7	45	24	43	20	48	22	57	44	85	56	89	66	94	70	94	75	74	59	85	64	62	31	38	25
8	44	23	47	36	46	34	68	41	88	62	87	65	92	72	97	72	83	60	83	66	68	40	50	34
9	41	9	65	45	54	42	70	39	87	60	84	68	92	71	92	62	83	72	81	54	57	35	49	28
10	11	-5	50	33	50	37	63	42	88	61	85	69	86	62	93	67	90	70	84	52	52	28	36	23
11	14	-6	64	30	60	45	77	53	88	60	87	67	89	69	90	60	84	65	86	55	63	28	44	21
12	27	-14	77	48	60	38	61	50	88	55	84	68	85	68	93	67	88	67	84	64	75	44	27	3
13	38	5	80	57	54	34	68	38	89	62	85	64	94	70	95	69	94	69	85	60	59	36	14	-1
14	48	26	74	49	61	26	56	35	91	68	81	56	94	73	90	62	93	70	86	63	63	30	31	3
15	50	29	63	46	63	28	75	42	89	65	79	55	93	74	88	62	88	68	88	67	70	30	52	19
16	43	18	60	40	52	27	51	28	88	60	82	56	93	70	89	58	84	71	86	67	70	51	51	40
17	44	20	63	34	52	26	62	33	91	65	88	65	92	67	92	62	76	65	84	60	72	46	58	24
18	37	29	64	43	55	28	67	41	92	64	91	69	90	62	92	61	84	56	73	45	55	43	65	23
19	36	31	56	34	68	34	72	40	90	65	92	72	88	63	94	62	83	58	76	45	44	40	69	31
20	34	25	50	27	70	54	77	44	91	61	84	67	89	61	99	67	84	56	83	47	45	40	66	49
21	56	30	61	43	64	51	75	52	90	63	85	66	93	66	97	67	71	44	82	53	58	42	70	48
22	65	37	71	46	56	40	82	56	90	61	87	66	91	60	96	69	77	48	69	45	58	41	49	36
23	40	23	70	46	55	34	82	57	88	71	90	68	96	65	94	68	78	55	72	44	57	28	41	31
24	44	36	53	39	68	36	70	48	88	67	91	70	96	71	92	71	79	57	61	30	65	30	45	26
25	58	41	55	41	74	48	75	53	91	69	93	67	90	70	86	69	82	64	56	31	64	46	34	24
26	68	51	79	53	67	45	81	53	89	70	80	64	85	70	82	69	73	63	55	33	54	33	41	33
27	56	39	69	40	63	33	83	58	91	72	81	68	82	57	85	64	73	44	62	36	58	35	34	25
28	51	29	42	26	68	35	84	63	90	66	85	67	82	62	89	59	76	43	71	48	59	38	45	22
29	62	26	77	40	61	22	94	71	89	69	85	66	90	63	71	41	74	51	70	51	56	46	51	23
30	62	40	76	55	87	64	86	65	85	64	88	73	93	67	74	43	70	54	68	39	47	23	47	20
31	55	25	55	39	55	39	73	63	73	63	92	71	89	67	71	36	71	36	71	36	71	36	71	36
AV.	47	25	62	39	57	36	68	45	87	61	85	65	90	68	91	66	82	61	77	51	60	37	50	28
MEAN	36.2		50.5		46.6		56.7		74.1		75.3		79.0		78.6		71.6		64.0		47.2		39.0	
STA AV	49	29	55	35	58	38	72	49	81	58	86	65	90	68	90	67	84	62	74	50	62	40	52	32

NOTES: TEMPERATURE DATA FROM U. S. WEATHER BUREAU STATION AT HOLLY SPRINGS 2N, MISS. STATION AVERAGE (STA AV) BASED ON RECORDS FROM JAN. 1957 THROUGH DEC. 1962.

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI				WATERSHED W-4		62.01	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	.16	1.12	.00	.00	.00	.15	.00	.00	
2	.00	.00	.00	.00	.00	.36	.00	.17	.00	.00	.01	.00	
3	.00	.00	.00	.00	.00	.48	.00	.00	.00	.00	.03	.00	
4	.00	.00	.00	.00	.00	.91	.00	.00	2.37	.00	.00	.00	
5	1.37	.28	.00	.11	.00	.00	.29	.00	.00	.00	.00	.04	
6	.01	.00	.00	.16	.00	.00	.61	.00	.00	.00	.00	.00	
7	.00	.00	.00	.00	.00	.25	.00	.00	.00	.56	.00	.00	
8	.00	.06	.50	.22	.00	.08	.00	.00	.68	.00	.20	.00	
9	.11	.00	.04	.00	.00	.02	.00	.00	.89	.00	.00	.00	
10	.00	.00	.27	.55	.00	.21	.00	.00	.00	.00	.00	.00	
11	.00	.00	.03	1.78	.00	.41	.48	.00	.00	.00	.32	.00	
12	.00	.00	.00	.12	.00	.05	.00	.00	.00	.00	.00	.00	
13	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	
14	1.03	.00	.00	.00	.00	.00	.00	.00	.69	.01	.00	.00	
15	.07	.53	.00	.00	.00	.00	.00	.00	.66	.03	.00	.00	
16	.00	.00	.00	.00	.14	.00	.00	.00	.06	.82	.00	.00	
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.43	.06	
18	.00	.52	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	
19	.05	.00	.00	.00	.00	.06	.00	.00	.00	.00	.13	.00	
20	.04	.04	.53	.00	.00	.00	.00	.00	.00	.37	.00	.00	
21	.11	.34	.00	.00	.00	.04	.00	.00	.00	.08	.11	.59	
22	1.60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
23	.20	3.38	.00	.00	.00	.00	.00	.84	.00	.00	.00	.00	
24	.12	.00	.00	.00	.00	.36	1.20	.14	.00	.00	.00	.55	
25	.43	1.16	.42	.00	.00	.66	1.25	1.11	.15	.00	.26	.00	
26	.39	1.16	.00	.00	.00	.28	.00	.00	.31	.00	.00	.01	
27	.28	.49	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00	
28	.00	.00	.00	.16	.00	.00	.04	.00	.00	.00	.00	.24	
29	.00	-----	.00	.00	.12	.14	.00	.00	.00	.00	.00	.15	
30	.00	-----	1.05	.54	1.76	.00	.00	.36	.00	.00	.00	.00	
31	.00	-----	.19	-----	.00	-----	.24	.00	-----	.00	-----	.00	
TOTAL	5.81	7.96	3.03	3.88	2.18	5.43	4.11	2.62	5.83	2.02	1.53	1.64	
STA AV	4.29	5.28	4.44	4.39	3.68	4.19	4.10	2.75	5.29	2.64	4.88	4.56	

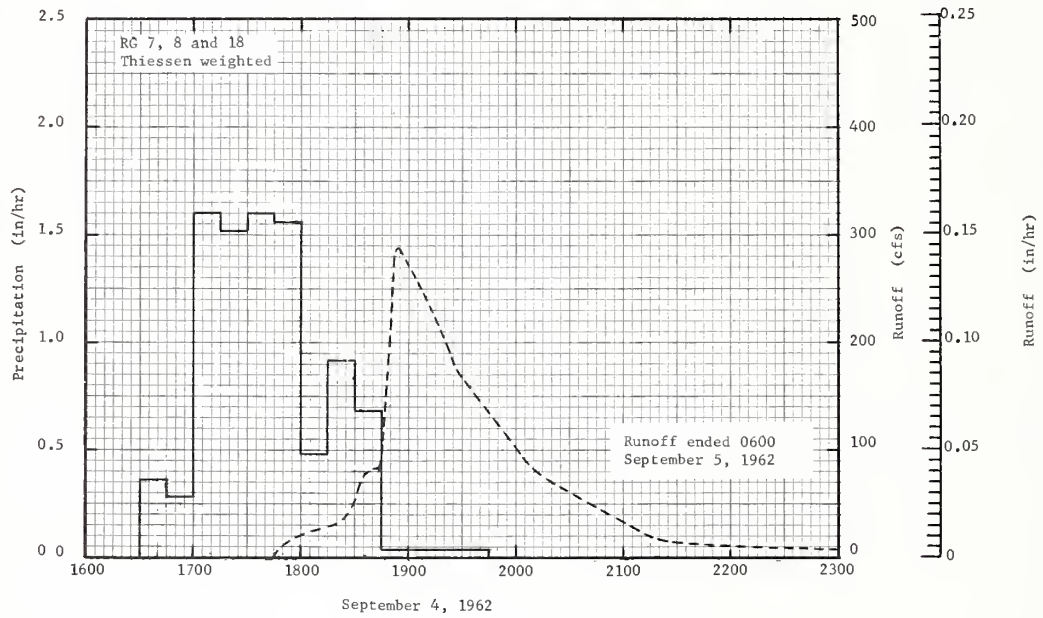
NOTES: DAILY PRECIPITATION VALUES ARE THIESSEN WEIGHTED FROM RAIN GAGES 7, 8, AND 18. STA AV FOR 6-YR 1957-62.

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-4	62-01
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	1.49	.49	1.60	.03	.03	5.79	.00	.00	.00	.00	.00	.00		
2	.33	.45	1.21	.00	.00	.79	.00	.00	.00	.00	.00	.00		
3	.23	.29	.81	.00	.00	2.40	.00	.00	.00	.00	.00	.00		
4	.05	.09	.57	.00	.00	16.05	.00	.00	15.60	.00	.00	.00		
5	14.59	.50	.45	.00	.00	.01	.00	.00	.29	.00	.00	.00		
6	4.58	.00	.36	.00	.00	.00	.00	.00	.00	.00	.00	.00		
7	1.23	.04	.15	.00	.00	.00	.05	.00	.00	.00	.00	.00		
8	.85	.22	.55	.00	.00	.36	.00	.00	1.95	.00	.00	.00		
9	.85	.10	.39	.00	.00	.00	.00	.00	2.82	.00	.00	.00		
10	.85	.00	.32	.08	.00	.00	.00	.00	.00	.00	.00	.00		
11	.85	.00	.17	44.31	.00	1.36	.00	.00	.00	.00	.00	.00		
12	.85	.00	.00	6.11	.00	.07	.00	.00	.00	.00	.00	.00		
13	.56	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00		
14	22.12	.00	.00	.52	.00	.00	.00	.00	.00	.00	.00	.00		
15	14.22	.05	.00	.32	.00	.00	.00	.00	.13	.00	.00	.00		
16	.90	.01	.00	.04	.00	.00	.00	.00	1.97	.94	.00	.00		
17	.85	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
18	.85	.43	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
19	.85	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.85	.00	.18	.00	.00	.00	.00	.00	.00	.00	.00	.00		
21	.49	.24	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00		
22	37.81	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	12.01	146.43	.00	.00	.00	.00	.00	1.44	.00	.00	.00	.00		
24	1.62	6.27	.00	.00	.00	.00	.63	.00	.00	.00	.00	.00		
25	4.05	35.67	.11	.00	.00	.00	6.40	4.74	.00	.00	.00	.00		
26	2.22	44.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
27	3.64	24.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
28	1.27	4.65	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
29	.68	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
30	.53	-----	.49	.00	.68	.00	.00	.00	.00	.00	.00	.00		
31	.49	-----	8.63	-----	.00	-----	.00	.00	-----	.00	-----	.00		
MEAN	4.28	9.43	.51	1.73	.02	.89	.23	.20	.76	.03	.00	.00		
INCHES	1.58	3.14	.19	.62	.01	.32	.08	.07	.27	.01	.00	.00		

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.01190. RECORDS ARE FAIR.

1962			SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI				WATERSHED W-4				62-01	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)						
9-4	<u>1/2/</u> .09	.0000	Event of September 4-5, 1962 ^{3/}				9- 4	1744	.00	.0000						
			9-4	RG	7											
				1638	.00	.00								1756	19.50	.0009
				1644	.50	.05								1824	34.83	.0071
				1703	.22	.12								1836	81.65	.0129
				1713	.78	.25								1844	86.68	.0184
				1723	1.68	.53										
				1743	1.83	1.14								1854	290.00	.0338
				1758	1.64	1.55								1914	230.00	.0764
				1803	.96	1.63								1926	177.68	.0964
				1813	.06	1.64								2012	80.00	.1450
				1833	.84	1.92								2118	18.02	.1715
				1843	.42	1.99								2244	7.66	.1805
				1951	.04	2.04								2400	3.31	.1840
				RG	18									0304	.60	.1869
				1643		.00								0600	.00	.1873
1959		3.05		9- 5												
9-4	3 RG	AVG 1/4/														
	1630	.00	.00													
	1645	.36	.09													
	1700	.28	.16													
	1715	1.60	.56													
	1730	1.52	.94													
	1745	1.60	1.34													
	1800	1.56	1.73													
	1815	.48	1.85													
	1830	.92	2.08													
	1845	.68	2.25													
	1900	.04	2.26													
	1915	.04	2.27													
	1930	.04	2.28													
	1945	.04	2.29													

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.000496. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.1-4. 1/ RAIN GAGES 7, 8, AND 18 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1200 ON SEPT. 4, 1962. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 3/ ISOHYETAL MAP ON P. 62.11-5. 4/ RAINFALL FOR RAIN GAGE 8 LISTED ON P. 62.2-3.



OXFORD, MISSISSIPPI WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI				WATERSHED W-51/				62.02	
						AREA—1,130 ACRES (1.76 SQ. MILES)									
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962 P ² / Q	5.66 3.23	7.89 4.01	3.00 .42	3.93 1.36	2.29 .01	5.58 .58	4.40 .16	3.07 .14	5.79 .47	2.77 .20	1.55 .00	1.62 .00	47.55 10.58		
STA AV ³ /P (57-62) Q	4.36 1.81	5.15 1.91	4.39 1.30	4.74 1.17	3.72 .54	4.33 .54	3.90 .17	3.10 .12	4.84 .43	2.55 .20	4.87 1.02	4.55 1.15	50.50 10.36		
MEAN P ⁴ / 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.90	2-23	.80	2-23	1.29	2-23	1.69	2-23	1.98	2-23	2.25	2-23	2.25	2-23	3.97

MAXIMUMS FOR PERIOD OF RECORD																
1957 to 1962	2-23 1962	.90	2-23 1962	.80	2-23 1962	1.29	11-13 1957	1.76	11-13 1957	2.26	1-31 1957	2.48	1-30 1957	3.72	1-27 1957	5.25

NOTES: Quality of records: P, good; Q, good. Watershed conditions: About 26% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 51% in pasture and idle land, good cover April to October with fair cover remainder of year; 21% in woods; 2% in bare gullies. 1/ About 10% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 8 and 19. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Ruston fine sandy loam to sandy clay loam	58	0-4	Weak fine crumb	Moderate- ly rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderate- ly rapid	Rapid
Providence silt loam and silty clay loam	15	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow
Grenada silt loam	12	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Loring silt loam to silty clay loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Collins silt loam	7	0-8	Weak fine granular	Moderate- ly rapid	-----	-----	6	Moderate- ly rapid	Rapid

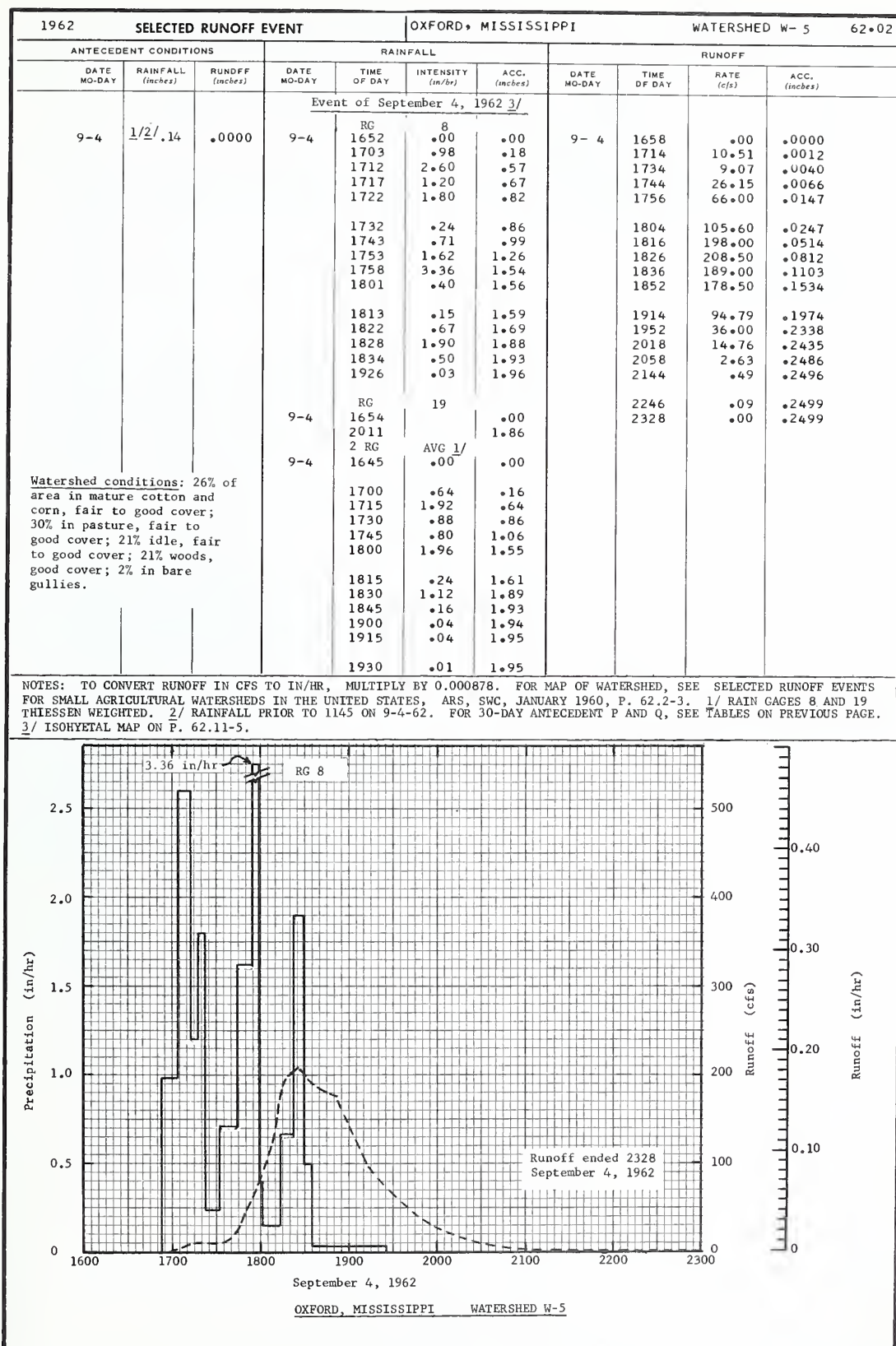
GEOLOGY: Approximately 88% of the surface area is occupied by the Kosciusko formation, 10% by the Tallahatta formation and 2% is valley alluvium. A normal westerly dip of about 8 to 10 feet per mile has been increased slightly and changed to a south-southwesterly direction by a fault along the southern boundary of the watershed. The ground-water gradient which occurs at depths in excess of 50 feet below the stream channel has been similarly affected. Perched water bodies are known to exist above the permanent water table but the areal extent or probable effect of these on the watershed hydrology has not been determined. A more detailed description of the geologic formations and ground-water conditions is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W- 5	62-02
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.16	1.13	.00	.00	.00	.17	.00	.00		
2	.00	.00	.00	.00	.00	.55	.00	.16	.00	.00	.00	.00		
3	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.02	.00		
4	.00	.00	.00	.00	.00	1.39	.00	.00	2.08	.00	.00	.00		
5	1.24	.25	.00	.10	.00	.00	.86	.00	.00	.00	.00	.04		
6	.02	.00	.00	.15	.00	.00	.43	.00	.00	.00	.00	.00		
7	.00	.00	.00	.00	.00	.51	.00	.00	.00	.61	.00	.00		
8	.00	.05	.48	.20	.00	.00	.00	.00	.58	.00	.20	.00		
9	.09	.00	.03	.00	.00	.09	.00	.00	.98	.00	.00	.00		
10	.00	.00	.24	.54	.00	.03	.00	.00	.00	.00	.00	.00		
11	.00	.00	.03	1.79	.00	.03	.34	.00	.00	.00	.31	.00		
12	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00		
14	.99	.00	.00	.00	.00	.00	.00	.00	.87	.00	.00	.00		
15	.09	.54	.00	.00	.00	.00	.00	.00	.64	.08	.00	.00		
16	.00	.00	.00	.00	.19	.00	.00	.00	.10	1.41	.00	.00		
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45	.08		
18	.00	.50	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00		
19	.05	.00	.00	.00	.00	.06	.00	.00	.00	.00	.11	.00		
20	.04	.05	.52	.00	.00	.00	.00	.00	.00	.41	.00	.00		
21	.07	.30	.00	.00	.00	.05	.00	.00	.00	.09	.13	.59		
22	1.66	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	.24	3.31	.00	.00	.00	.00	.00	1.88	.00	.00	.00	.00		
24	.10	.00	.00	.00	.00	.17	1.31	.16	.00	.00	.00	.51		
25	.40	1.05	.42	.00	.00	.68	1.28	.62	.14	.00	.28	.00		
26	.41	1.35	.00	.00	.00	.11	.00	.00	.35	.00	.00	.03		
27	.26	.45	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00		
28	.00	.00	.00	.14	.00	.00	.05	.00	.00	.00	.00	.24		
29	.00	-----	.00	.00	.15	.28	.00	.00	.00	.00	.00	.13		
30	.00	-----	1.05	.65	1.79	.00	.00	.25	.00	.00	.00	.00		
31	.00	-----	.23	-----	.00	-----	.13	.00	-----	.00	-----	.00		
TOTAL	5.66	7.89	3.00	3.93	2.29	5.58	4.40	3.07	5.79	2.77	1.55	1.62		
STA AV	4.36	5.15	4.39	4.74	3.72	4.33	3.90	3.10	4.84	2.55	4.87	4.55		

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES ARE THIESSEN WEIGHTED FROM RAIN GAGES 8 AND 19. STA AV FOR 6-YR 1957-62.

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-5	62-02
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	2.71	.30	.60	.74	.54	5.76	.00	.00	.00	.00	.00	.00		
2	.55	.23	.20	.97	.01	1.83	.00	.00	.00	.00	.00	.00		
3	.36	.20	.11	.68	.00	2.24	.00	.00	.00	.00	.00	.00		
4	.23	.27	.04	.14	.00	15.17	.00	.00	11.85	.00	.00	.00		
5	23.94	.21	.04	.14	.00	.21	2.28	.00	.00	.00	.00	.00		
6	7.84	.12	.05	.13	.00	.00	.18	.00	.02	.00	.00	.00		
7	1.04	.18	.02	.13	.00	.00	.21	.00	.02	.05	.00	.00		
8	.46	.22	.28	.16	.00	.29	.00	.00	.85	.00	.00	.00		
9	.49	.18	.31	.18	.00	.00	.00	.00	4.02	.00	.00	.00		
10	.49	.08	.33	.42	.00	.00	.00	.00	.01	.00	.00	.00		
11	.49	.00	.05	45.69	.00	.00	.00	.00	.00	.00	.00	.00		
12	.49	.00	.00	12.24	.00	.00	.00	.00	.00	.00	.00	.00		
13	.35	.00	.00	1.16	.00	.00	.00	.00	.00	.00	.00	.00		
14	11.74	.00	.01	.39	.00	.00	.00	.00	3.73	.00	.00	.00		
15	15.55	.09	.02	.10	.00	.00	.00	.00	.69	.00	.00	.00		
16	.81	.02	.02	.08	.00	.00	.00	.00	1.22	9.26	.00	.00		
17	.43	.00	.02	.11	.01	.00	.00	.00	.00	.01	.00	.00		
18	.43	.35	.02	.11	.00	.00	.00	.00	.00	.00	.00	.00		
19	.43	.08	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00		
20	.25	.00	.38	.09	.00	.00	.00	.00	.00	.00	.00	.00		
21	.07	.09	.24	.14	.00	.00	.00	.00	.00	.01	.00	.00		
22	31.21	.03	.00	.11	.00	.00	.00	.00	.00	.00	.00	.00		
23	6.57	106.05	.00	.06	.00	.00	.00	6.27	.00	.00	.00	.00		
24	3.13	.51	.01	.10	.00	.00	.95	.06	.00	.00	.00	.00		
25	12.86	27.49	.19	.14	.00	.00	3.86	.22	.00	.00	.00	.00		
26	8.07	27.90	.02	.12	.00	.00	.00	.02	.00	.00	.00	.00		
27	14.15	20.50	.02	.10	.00	.00	.00	.00	.00	.00	.00	.00		
28	5.81	4.68	.04	.08	.00	2.07	.00	.00	.00	.00	.00	.00		
29	1.10	-----	.06	.08	.00	.00	.00	.00	.00	.00	.00	.00		
30	.43	-----	1.17	.08	.09	.00	.00	.01	.00	.00	.00	.00		
31	.40	-----	15.90	-----	.00	-----	.00	.00	-----	.00	-----	.00		
MEAN	4.93	6.77	.65	2.15	.02	.92	.24	.21	.75	.30	.00	.00		
INCHES	3.23	4.01	.42	1.36	.01	.58	.16	.14	.47	.20	.00	.00		

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.02106. QUALITY OF RECORDS: GOOD.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI		WATERSHED W-10 ¹ /		62.03						
						AREA—5,530 ACRES		(8.64 SQ. MILES)								
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ₂ / Q	5.85 2.51	7.14 3.55	2.77 .24	3.99 .87	2.10 .05	5.22 .27	4.51 .28	2.23 .03	4.85 .26	3.65 .66	1.83 .00	1.62 .00	45.76 8.72			
STA AV ₃ /P (57-62) Q	4.41 1.36	5.36 1.69	4.46 1.09	4.78 1.10	4.15 .72	4.27 .32	4.17 .27	2.91 .20	4.86 .52	2.58 .18	4.89 .81	4.76 .94	51.60 9.20			
MEAN P ₄ / 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	1.12	2-23	1.00	2-23	1.61	2-23	2.13	2-23	2.39	2-23	2.58	2-23	2.65	2-23	3.40
MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO 19 62	2-23 1962	1.12	2-23 1962	1.00	2-23 1962	1.61	2-23 1962	2.13	2-23 1962	2.39	2-23 1962	2.58	1-30 1957	2.98	1-27 1957	4.08
NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 20% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 62% in pasture and idle land, good cover April to October with fair cover remainder of year; 15% in woods, 3% in bare gullies. 1/ About 12% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from gages 13, 14, 20, 24, and 26. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																

SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Ruston fine sandy loam to sandy clay loam	50	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid
Gollins silt loam	16	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid
Providence silt loam and silty clay loam	14	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow
Loring silt loam to silty clay loam	12	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Grenada silt loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid

GEOLOGY: About 80% of the watershed is in the Kosciusko formation, 15% is in the Tallahatta formation, and 5% is valley alluvial material. In the western half of the watershed the stratigraphic section and the ground-water piezometric surface have a normal westerly dip of about 8 to 10 feet per mile. Both dip and piezometric gradient have been changed to a southerly direction in the southern one-half by a fault along the southern boundary of Watersheds W-4, W-5, and W-35. Ground water occurs within a few feet of the stream channel at the gaging station. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.

TOPOGRAPHIC MAP: (Revision) Elevation of stream bed at W-10 gaging station should read 397 ft. above MSL, rather than 454 ft. as shown on map, page 62.3-3 in USDA Misc. Pub. 945 for 1956-59.

1962 DAILY PRECIPITATION (inches)					OXFORD, MISSISSIPPI				WATERSHED W-10				62.03
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	.18	.37	.00	.00	.02	.47	.00	.00	
2	.00	.00	.00	.00	.00	.68	.13	.33	.00	.00	.00	.00	
3	.00	.00	.00	.00	.00	.79	.00	.00	.00	.00	.03	.00	
4	.00	.00	.00	.00	.00	.59	.00	.00	1.78	.00	.00	.00	
5	.94	.24	.00	.12	.00	.00	.83	.00	.00	.00	.00	.05	
6	.04	.00	.00	.12	.00	.00	.09	.00	.00	.00	.00	.00	
7	.00	.00	.00	.00	.00	.08	.00	.00	.00	.69	.00	.00	
8	.00	.05	.52	.17	.00	.12	.00	.00	.38	.00	.21	.00	
9	.17	.00	.02	.00	.00	.02	.00	.00	.91	.00	.00	.00	
10	.00	.00	.29	.66	.00	.29	.00	.00	.00	.00	.00	.00	
11	.00	.00	.01	1.47	.00	.78	.31	.00	.00	.00	.41	.00	
12	.00	.00	.00	.14	.00	.01	.00	.00	.00	.00	.00	.00	
13	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	
14	1.14	.00	.00	.00	.00	.00	.00	.00	.96	.00	.00	.00	
15	.07	.52	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	
16	.00	.00	.00	.00	.02	.00	.00	.00	.11	1.89	.00	.03	
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.52	.02	
18	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	
19	.05	.00	.00	.00	.00	.09	.00	.00	.00	.00	.14	.00	
20	.05	.08	.51	.00	.00	.00	.00	.00	.00	.51	.00	.00	
21	.14	.31	.00	.00	.00	.05	.00	.00	.00	.09	.14	.54	
22	1.77	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
23	.21	3.50	.00	.00	.00	.00	.00	.19	.00	.00	.00	.00	
24	.11	.00	.00	.00	.00	.44	1.51	.62	.00	.00	.00	.53	
25	.41	.87	.33	.00	.00	.58	1.43	.83	.14	.00	.33	.00	
26	.49	.68	.00	.00	.00	.13	.00	.00	.40	.00	.00	.02	
27	.26	.38	.00	.30	.00	.00	.00	.00	.00	.00	.00	.00	
28	.00	.00	.00	.04	.00	.00	.11	.00	.00	.00	.00	.27	
29	.00	-----	.00	.00	.39	.20	.00	.00	.00	.00	.00	.16	
30	.00	-----	.91	.97	1.51	.00	.00	.21	.00	.00	.00	.00	
31	.00	-----	.18	-----	.00	-----	.10	.05	-----	.00	-----	.00	
TOTAL	5.85	7.14	2.77	3.99	2.10	5.22	4.51	2.23	4.85	3.65	1.83	1.62	
STA AV	4.41	5.36	4.46	4.78	4.15	4.27	4.17	2.91	4.86	2.58	4.89	4.76	

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES ARE THIESSEN WEIGHTED FROM RAIN GAGES 13, 14, 20, 24, AND 26. STA AV FOR 6-YR 1957-62.

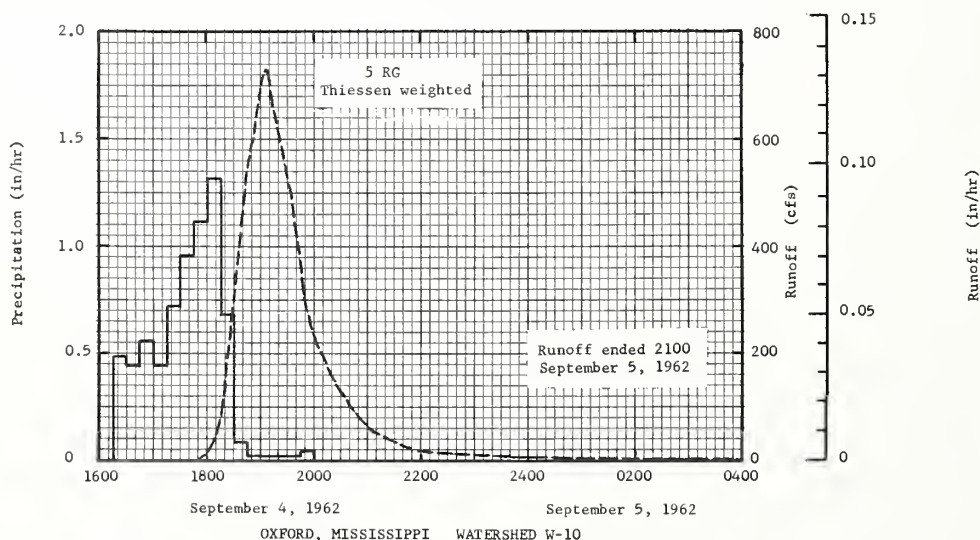
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI			WATERSHED W-10			62.03	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	18.77	1.62	2.65	1.41	10.63	.62	.00	.00	.00	.00	.00	.00	
2	2.40	1.39	2.50	.42	.03	4.27	.00	.00	.00	.00	.00	.00	
3	2.68	.97	2.26	.18	.01	5.68	.00	.00	.00	.00	.00	.00	
4	2.02	.73	2.01	.10	.01	18.26	.00	.00	42.78	.00	.00	.00	
5	36.02	1.37	1.59	.29	.00	.25	6.67	.00	.42	.00	.00	.00	
6	13.21	1.15	1.10	.33	.00	.03	.00	.00	.00	.00	.00	.00	
7	4.41	.68	.74	.16	.00	.02	.00	.00	.00	.97	.00	.00	
8	1.26	.79	1.28	.22	.00	.05	.00	.00	.00	.00	.00	.00	
9	.97	.84	.71	.19	.00	.04	.00	.00	5.12	.00	.00	.00	
10	1.32	.68	1.04	3.85	.00	.02	.00	.00	.02	.00	.00	.00	
11	1.46	.63	.90	140.39	.00	32.15	.00	.00	.00	.00	.00	.00	
12	1.10	.68	.67	35.25	.00	1.04	.00	.00	.00	.00	.00	.00	
13	.97	.73	.37	6.79	.00	.00	.00	.00	.00	.00	.00	.00	
14	68.97	.68	.31	3.66	.00	.00	.00	.00	11.47	.00	.00	.00	
15	62.26	2.34	.29	2.02	.00	.00	.00	.00	.00	.00	.00	.00	
16	7.28	.98	.24	1.35	.00	.00	.00	.00	.00	151.87	.00	.00	
17	2.82	.37	.24	.90	.00	.00	.00	.00	.00	.95	.01	.00	
18	1.63	12.16	.22	.84	.00	.00	.00	.00	.00	.21	.01	.00	
19	1.45	3.99	.29	.68	.00	.00	.00	.00	.00	.08	.00	.00	
20	1.45	.97	1.84	.44	.00	.00	.00	.00	.00	.02	.00	.00	
21	1.73	3.88	1.01	.29	.00	.00	.00	.00	.00	.00	.00	.00	
22	145.48	1.92	.31	.17	.00	.00	.00	.00	.00	.00	.00	.00	
23	64.98	596.39	.27	.08	.00	.00	.00	.80	.00	.00	.00	.00	
24	16.60	18.53	.27	.18	.00	.00	9.67	.02	.00	.00	.00	.00	
25	38.46	76.30	.27	.20	.00	.00	48.02	7.16	.00	.00	.00	.00	
26	24.78	43.72	.22	.14	.00	.00	.00	.00	.00	.00	.00	.00	
27	33.07	46.15	.22	.14	.00	.00	.00	.00	.00	.00	.00	.00	
28	13.89	4.68	.16	.09	.00	.00	.00	.00	.00	.00	.00	.00	
29	5.81	-----	.18	.01	.00	.00	.00	.00	.00	.00	.00	.00	
30	3.90	-----	1.89	1.01	1.73	.00	.00	.00	.00	.00	.00	.00	
31	1.93	-----	28.76	-----	.02	-----	.00	.00	-----	.00	-----	.00	
MEAN	18.80	29.47	1.76	6.72	.40	2.08	2.08	.26	1.99	4.97	.00	.00	
INCHES	2.51	3.55	.24	.87	.05	.27	.28	.03	.26	.66	.00	.00	

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0043041. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-10				62-03
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4-5, 1962 ^{3/}											
9-4	$\frac{1}{2}/.04$	.0000	9-4	RG	13		9-4	1738	.00	.0000	
				1634	.00	.00		1746	.05	.0000	
				1652	1.67	.50		1758	9.22	.0001	
				1703	.33	.56		1816	87.84	.0027	
				1710	1.20	.70		1832	345.64	.0131	
				1723	.05	.71					
				1733	.90	.86		1846	562.00	.0320	
				1744	.98	1.04		1906	730.00	.0706	
				1807	.76	1.33		1914	651.64	.0871	
				1823	1.42	1.71		1932	503.13	.1182	
				1829	.50	1.76		1946	337.68	.1357	
				1843	.17	1.80		1954	260.00	.1429	
				1951	.02	1.82		2028	135.51	.1629	
				RG	14			2104	59.19	.1734	
			9-4	1634		.00		2158	19.67	.1798	
				1951		1.96		2334	6.06	.1834	
			9-4	RG	20		9-5	2400	5.07	.1839	
				1645		.00		0304	.50	.1854	
			9-4	2000		1.52		0602	.07	.1856	
				RG	24			0918	.02	.1856	
			9-4	1647		.00		1328	.05	.1856	
				2002		1.58		1758	.01	.1857	
			9-4	5 RG	AVG $\frac{1}{4}$			2100	.00	.1857	
				1615		.00					
			9-4	1630		.12					
				1645		.23					
			9-4	1700		.37					
				1715		.48					
			9-4	1730		.66					
				1745		.90					
			9-4	1800		1.18					
				1815		1.52					
			9-4	1830		1.69					
				1845		1.71					
			9-4	1900		1.71					
				1915		1.72					
			9-4	1930		1.72					
				1945		1.73					
			9-4	2000		1.74					

Watershed conditions: 20% of area in mature cotton and corn, fair cover; 9% in pasture and 53% idle, fair to good cover; 15% in woods, good cover; 3% in bare gullies.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0001793. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.3-3. 1/ RAIN GAGES 13, 14, 20, 24, AND 26 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1156 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ ISOHYETAL MAP ON P. 62.11-5. 4/ RAINFALL FOR GAGE 26 LISTED ON P. 62.10-3.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI AREA—22,800 ACRES (35.6				WATERSHED W-12 ^{1/} SQ. MILES)				62.04		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{2/} Q	5.92 1.80	7.31 2.98	2.81 .34	3.52 .73	2.16 .04	5.68 .35	4.77 .29	2.43 .03	4.81 .15	2.88 .11	1.72 .01	1.49 .02	45.50 6.85			
STA AV ^{3/} P (57-62) Q	4.35 .97	5.19 1.22	4.36 .75	4.40 .64	3.78 .38	4.42 .30	4.10 .18	2.98 .07	4.78 .26	2.60 .09	4.82 .48	4.53 .68	50.31 6.02			
MEAN P ^{4/} 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.35	2-23	.35	2-23	.68	2-23	1.38	2-23	1.62	2-23	1.84	2-23	1.88	2-23	2.98
MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO 19 62	2-23 1962	.35	2-23 1962	.35	2-23 1962	.68	2-23 1962	1.38	2-23 1962	1.62	2-23 1962	1.84	1-30 1957	2.28	1-27 1957	3.07
NOTES: Quality of records: P, good; Q, good. Watershed conditions: About 20% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 52% in pasture and idle land, good cover April to October with fair cover remainder of year; 23% in woods; 2% in bare gullies; 3% urban. 1/ About 15% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 15 rain gages. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																

SOILS: (Revision) Loess soils underlain by Coastal Plains material; soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Ruston fine sandy loam to sandy clay loam	52	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid
Gollins silt loam	20	0-8	Weak fine granular	Moderately rapid	-----	----	6	Moderately rapid	Rapid
Providence silt loam and silty clay loam	13	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow
Grenada silt loam	9	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Loring silt loam to silty clay loam	6	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid

GEOLOGY: About 56% of the surface area is occupied by the Kosciusko formation, 26% by the Tallahatta formation and 18% is valley alluvial material. The alluvial valleys are relatively wide and flat. The stratigraphic and piezometric gradient dip of about 8 to 10 feet per mile is westerly over most of the watershed. Structural and stratigraphic interferences affecting the southern portion are described under Sub-watersheds W-4, W-5, and W-28. Base flow from ground water is essentially continuous at the gaging station. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map, page 62.11-4.

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-12	62+04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.18	.74	.00	.00	.01	.36	.00	.00		
2	.00	.00	.00	.00	.00	.49	.01	.33	.01	.00	.01	.00		
3	.00	.00	.00	.00	.00	.42	.00	.00	.00	.00	.03	.00		
4	.00	.00	.00	.00	.00	1.26	.00	.00	1.87	.00	.00	.00		
5	1.15	.21	.00	.11	.00	.00	.54	.00	.00	.00	.00	.05		
6	.03	.00	.00	.15	.00	.00	.60	.00	.00	.00	.00	.00		
7	.00	.00	.00	.00	.00	.12	.00	.00	.00	.64	.00	.00		
8	.00	.05	.48	.20	.00	.11	.00	.00	.37	.00	.21	.00		
9	.16	.00	.04	.00	.00	.01	.00	.00	.79	.00	.00	.00		
10	.00	.00	.27	.81	.00	.31	.00	.00	.00	.00	.00	.00		
11	.00	.00	.02	1.18	.00	.37	.52	.00	.00	.00	.41	.00		
12	.00	.00	.00	.10	.00	.11	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00		
14	1.07	.00	.00	.00	.00	.00	.00	.00	.71	.19	.00	.00		
15	.08	.51	.00	.00	.00	.00	.00	.00	.41	.06	.00	.00		
16	.00	.00	.00	.00	.07	.00	.00	.00	.05	1.22	.00	.01		
17	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.47	.04		
18	.00	.55	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00		
19	.05	.00	.00	.00	.00	.12	.00	.00	.00	.00	.14	.00		
20	.05	.05	.51	.00	.00	.00	.00	.00	.00	.34	.00	.00		
21	.12	.34	.00	.00	.00	.02	.00	.00	.00	.07	.13	.51		
22	1.77	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	.15	3.27	.00	.00	.00	.00	.00	.52	.00	.00	.00	.00		
24	.12	.00	.00	.00	.00	.55	1.40	.23	.01	.00	.00	.48		
25	.46	.90	.36	.00	.00	.56	1.42	1.04	.16	.00	.27	.00		
26	.44	1.06	.00	.00	.00	.24	.00	.00	.35	.00	.00	.02		
27	.27	.37	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00		
28	.00	.00	.00	.07	.00	.00	.02	.00	.00	.00	.00	.22		
29	.00	-----	.00	.00	.13	.25	.00	.00	.00	.00	.00	.16		
30	.00	-----	.96	.66	1.78	.00	.00	.29	.00	.00	.00	.00		
31	.00	-----	.17	-----	.00	-----	.26	.02	-----	.00	-----	.00		
TOTAL	5.92	7.31	2.81	3.52	2.16	5.68	4.77	2.43	4.81	2.88	1.72	1.49		
STA AV	4.35	5.19	4.36	4.40	3.78	4.42	4.10	2.98	4.78	2.60	4.82	4.53		

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION THIESSEN WEIGHTED FROM RAIN GAGES 4-9, 13, 15, 18, 19, 20, 25, 29, 30, AND 31. STA AV FOR 6-YR 1957-62.

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-12	62+04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	39.92	6.66	16.35	5.23	7.64	24.99	.79	.29	.60	1.28	.38	.33		
2	15.19	2.31	12.35	2.15	2.01	21.12	.72	.86	.54	.68	.33	.33		
3	9.45	2.46	10.68	2.00	1.73	19.05	.54	.25	.60	.43	.33	.38		
4	7.32	2.30	9.36	2.00	1.73	175.05	.38	.33	114.02	.43	.38	.43		
5	148.41	2.46	7.68	2.15	1.73	4.96	.33	.33	6.08	.43	.38	.43		
6	58.64	2.62	7.08	2.46	1.73	.63	13.36	.33	.38	.43	.54	.43		
7	17.18	2.46	8.16	2.46	1.73	.33	11.16	.38	.29	.91	.54	.43		
8	9.45	2.30	7.88	2.46	1.61	.77	.74	.43	.21	.43	.49	.43		
9	5.66	2.30	7.59	2.98	1.39	.48	.54	.34	3.05	.43	.43	.43		
10	3.94	2.30	21.03	12.64	1.19	.43	.54	.21	.16	.43	.49	.49		
11	4.15	2.46	18.72	445.62	1.02	38.83	.91	.14	.03	.43	.74	.49		
12	4.15	2.31	2.97	147.68	.93	5.93	1.11	.10	.03	.43	.68	.49		
13	3.94	1.87	2.48	14.60	1.02	1.72	.80	.21	.02	.43	.43	.54		
14	95.61	1.73	2.00	8.52	1.10	1.02	.66	.38	5.00	.43	.43	.54		
15	245.58	1.50	2.00	6.52	1.10	.93	.66	.43	.09	.43	.43	.54		
16	11.51	1.50	2.15	5.75	1.19	.93	.60	.38	4.71	87.94	.43	.54		
17	6.10	1.50	1.79	4.62	.97	.93	.54	.38	.33	1.55	.61	.54		
18	3.53	11.43	1.64	3.73	.72	.93	.49	.43	.29	.21	.56	.54		
19	3.96	4.15	1.38	2.86	.72	.93	.43	.43	.24	.15	.38	.54		
20	4.36	1.09	2.38	2.00	.60	.93	.43	.54	.24	.23	.43	.54		
21	4.36	6.62	8.49	2.00	.54	.93	.38	.66	.24	.38	.43	.49		
22	401.22	4.40	1.38	2.00	.43	.93	.33	.72	.24	.33	.43	.43		
23	320.26	1731.42	1.61	2.00	.38	.93	.33	1.98	.24	.33	.49	.43		
24	39.13	68.81	1.61	2.00	.43	5.81	32.27	.20	.29	.33	.54	.49		
25	92.80	313.64	3.04	2.00	.43	4.48	195.56	11.69	.43	.38	.49	.49		
26	48.74	254.74	1.32	2.15	.43	7.10	2.15	2.86	.42	.43	.38	.49		
27	67.07	369.99	1.20	2.30	.43	3.47	.45	.60	.18	.43	.33	.54		
28	26.95	50.01	1.49	1.90	.43	7.73	.80	.79	.18	.43	.38	.54		
29	7.94	-----	1.49	1.39	.43	1.88	.74	.72	.18	.43	.38	.54		
30	6.97	-----	2.76	2.46	4.65	.79	.49	.66	.18	.43	.33	.54		
31	5.17	-----	155.82	-----	.23	-----	.42	.66	-----	.43	-----	.54		
MEAN	55.44	102.04	10.51	23.28	1.31	11.16	8.85	.92	4.64	3.30	.45	.48		
INCHES	1.80	2.98	.34	.73	.04	.35	.29	.03	.15	.11	.01	.02		

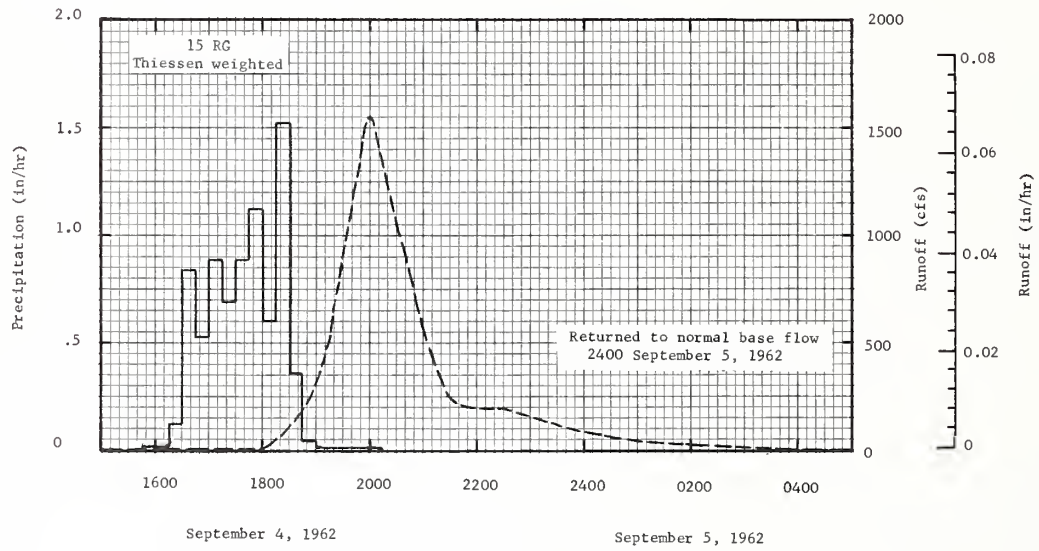
NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0010439. QUALITY OF RECORDS: GOOD.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-12			62.04	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
9-4	<u>1/2</u> /.06	<u>3</u> /.0005	Event of September 4-5, 1962 <u>4</u> /								
			9-4	RG	29			9- 4	1600	.43	.0000
				1631	.00	.00	1800		3.33	.0001	
				1640	1.27	.19	1900		310.00	.0069	
				1648	.98	.32	1915		534.68	.0115	
				1700	.55	.43	2000		1554.00	.0456	
				1733	.22	.55					
				1746	.37	.63	2100		560.00	.0916	
				1752	1.90	.82	2130		246.27	.1003	
				1805	.92	1.02	2200		199.76	.1052	
				1816	.60	1.13	2230		194.92	.1095	
				1820	3.30	1.35	2400		81.48	.1185	
				1826	5.00	1.85	9- 5	0100	44.31	.1212	
				1831	1.44	1.97		0200	21.99	.1227	
				1839	.45	2.03		0400	7.59	.1239	
				RG	4			0600	1.49	.1243	
			9-4	1607		.00		0800	.78	.1244	
				1857		.66		1400	.53	.1246	
			9-4	RG	5			2400	<u>6</u> /.43	.1248	
				1633		.00					
			9-4	1901		1.84					
				RG	9						
			9-4	1657		.00					
				2020		1.70					
			9-4	RG	25						
				1640		.00					
			9-4	2020		2.46					
				RG	31						
			9-4	1550		.00					
				1858		.87					
			9-4	15 RG	AVG <u>1/5</u> /						
1545	.00	.00									
			1600	.02	.00						
			1615	.02	.01						
			1630	.12	.04						
			1645	.84	.25						
			1700	.52	.38						
			1715	.88	.60						
			1730	.68	.77						
			1745	.88	.99						
			1800	1.12	1.27						
			1815	.60	1.42						
			1830	1.52	1.70						
			1845	.36	1.79						
			1900	.04	1.80						
			1915	.01	1.80						
			1930	.01	1.80						
			1945	.01	1.80						
			2000	.01	1.81						
			2015	.01	1.81						

Watershed conditions: 20% of area in mature cotton and corn, fair cover; 13% in pasture and 39% idle, fair to good cover; 23% in woods, good cover; 2% in bare gullies; 3% urban.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000435. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59. USDA MISC. PUB. 945, P. 62.4-6. 1/ RAIN GAGES 4-9, 13, 15, 18, 19, 20, 25, 29, 30, AND 31 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1220 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ RUNOFF PRIOR TO 1600 ON 9-4-62. 4/ ISOHYETAL MAP ON P. 62.11-5. 5/ RAINFALL FOR GAGES 7 AND 18 LISTED ON P. 62.1-3; GAGES 8 AND 19 ON P. 62.2-3; GAGES 13 AND 20 ON P. 62.3-3; GAGE 15, P. 62.5-3; GAGE 30, P. 62.7-3; AND GAGE 6 ON P. 62.8-3. 6/ NORMAL BASE FLOW.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000435. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.4-6. 1/ RAIN GAGES 4-9, 13, 15, 18, 19, 20, 25, 29, 30, AND 31 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1220 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ RUNOFF PRIOR TO 1600 ON 9-4-62. 4/ ISOHYETAL MAP ON P. 62.11-5. 5/ RAINFALL FOR GAGES 7 AND 18 LISTED ON P. 62.1-3; GAGES 8 AND 19 ON P. 62.2-3; GAGES 13 AND 20 ON P. 62.3-3; GAGE 15, P. 62.5-3; GAGE 30, P. 62.7-3; AND GAGE 6 ON P. 62.8-3. 6/ NORMAL BASE FLOW.



OXFORD, MISSISSIPPI WATERSHED W-12

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI						WATERSHED W-171/				62.05
						AREA—32,100 ACRES (50.2 SQ. MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ^{2/}	6.08	7.16	2.74	3.43	2.15	5.49	4.87	2.56	4.45	3.22	1.74	1.49	45.38			
Q	2.45	3.07	.57	.82	.28	.54	.44	.26	.37	.39	.22	.23	9.64			
STA AV ^{3/} P	4.41	5.20	4.30	4.47	3.78	4.48	4.18	3.18	4.55	2.60	4.78	4.63	50.56			
(57-62) Q	1.28	1.50	1.12	.83	.66	.45	.36	.32	.44	.27	.75	.93	8.91			
MEAN P ^{4/} 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.21	2-23	.21	2-23	.41	2-23	1.12	2-23	1.50	2-23	1.69	2-23	1.74	2-23	2.80
MAXIMUMS FOR PERIOD OF RECORD																
1957 TO 19 62	2-23 1962	.21	2-23 1962	.21	2-23 1962	.41	2-23 1962	1.12	2-23 1962	1.50	2-23 1962	1.69	1-31 1957	1.96	1-28 1957	2.99

NOTES: Quality of records: P, good; Q, good. Watershed conditions: About 20% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 55% in pasture and idle land, good cover April to October with fair cover remainder of year; 21% in woods; 2% in bare gullies; 2% urban. ^{1/} About 18% of area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from 20 rain gages. ^{3/} Precipitation and runoff records began Jan. 1957. ^{4/} Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

SOILS: (Revision) Loess soils underlain by Coastal Plains material; soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Ruston fine sandy loam to sandy clay loam	49	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid
Collins silt loam	21	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid
Providence silt loam and silty clay loam	12	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow
Grenada silt loam	10	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Loring silt loam to silty clay loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid

GEOLOGY: About 54% of the surface area is occupied by the Kosciusko formation, 26% by the Tallahatta formation, and 20% by valley alluvial material. The alluvial valleys are relatively wide and flat. A major portion of the watershed has a westerly dip of the stratigraphic section and ground-water piezometric surface of about 8 to 10 feet per mile. Structural and stratigraphic interferences (see Sub-watersheds W-4, W-5, and W-28) have changed both the dip and ground-water gradient to a southerly direction in the southern and eastern parts of the watershed. Base flow from ground water is continuous at the gaging station. A more detailed description of the geological formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geological map on page 62.11-4.

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHEO W-17	62.05
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.19	.59	.00	.00	.01	.51	.00	.00		
2	.00	.00	.00	.00	.00	.52	.11	.32	.00	.00	.01	.00		
3	.00	.00	.00	.00	.00	.45	.00	.00	.00	.00	.03	.00		
4	.00	.00	.00	.00	.00	1.12	.00	.00	1.72	.00	.00	.00		
5	1.09	.19	.00	.12	.00	.00	.56	.00	.00	.00	.00	.05		
6	.03	.00	.00	.13	.00	.00	.62	.00	.00	.00	.00	.00		
7	.00	.00	.00	.00	.00	.14	.00	.00	.00	.67	.00	.00		
8	.00	.05	.46	.20	.00	.09	.00	.00	.30	.00	.21	.00		
9	.16	.00	.04	.00	.00	.01	.00	.00	.74	.00	.00	.00		
10	.00	.00	.28	.81	.00	.37	.00	.00	.00	.00	.00	.00		
11	.00	.00	.02	1.02	.00	.31	.51	.00	.00	.00	.40	.00		
12	.00	.00	.00	.10	.00	.10	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00		
14	1.10	.00	.00	.00	.00	.00	.00	.00	.69	.14	.00	.00		
15	.08	.50	.00	.00	.00	.00	.00	.00	.32	.05	.00	.00		
16	.00	.00	.00	.00	.07	.00	.00	.00	.04	1.44	.00	.01		
17	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.48	.03		
18	.00	.54	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00		
19	.05	.00	.00	.00	.00	.14	.00	.00	.00	.00	.14	.00		
20	.05	.04	.50	.00	.00	.00	.00	.00	.00	.34	.00	.00		
21	.10	.36	.00	.00	.00	.02	.00	.00	.00	.07	.14	.51		
22	1.95	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	.16	3.36	.00	.00	.00	.00	.00	.39	.00	.00	.00	.00		
24	.13	.00	.00	.00	.00	.58	1.22	.48	.01	.00	.00	.47		
25	.47	.90	.33	.00	.00	.55	1.54	1.08	.17	.00	.28	.00		
26	.45	.86	.00	.00	.00	.30	.00	.00	.37	.00	.00	.03		
27	.26	.36	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00		
28	.00	.00	.00	.05	.00	.00	.02	.00	.00	.00	.00	.24		
29	.00	-----	.00	.00	.21	.20	.00	.00	.00	.00	.00	.15		
30	.00	-----	.94	.75	1.68	.00	.00	.23	.00	.00	.00	.00		
31	.00	-----	.17	-----	.00	-----	.29	.06	-----	.00	-----	.00		
TOTAL	6.08	7.16	2.74	3.43	2.15	5.49	4.87	2.56	4.45	3.22	1.74	1.49		
STA AV	4.41	5.20	4.30	4.47	3.78	4.48	4.18	3.18	4.55	2.60	4.78	4.63		

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 2, 4-9, 13-15, 17-20, 22, 25, AND 28-31. STA AV FOR 6-YR 1957-62.

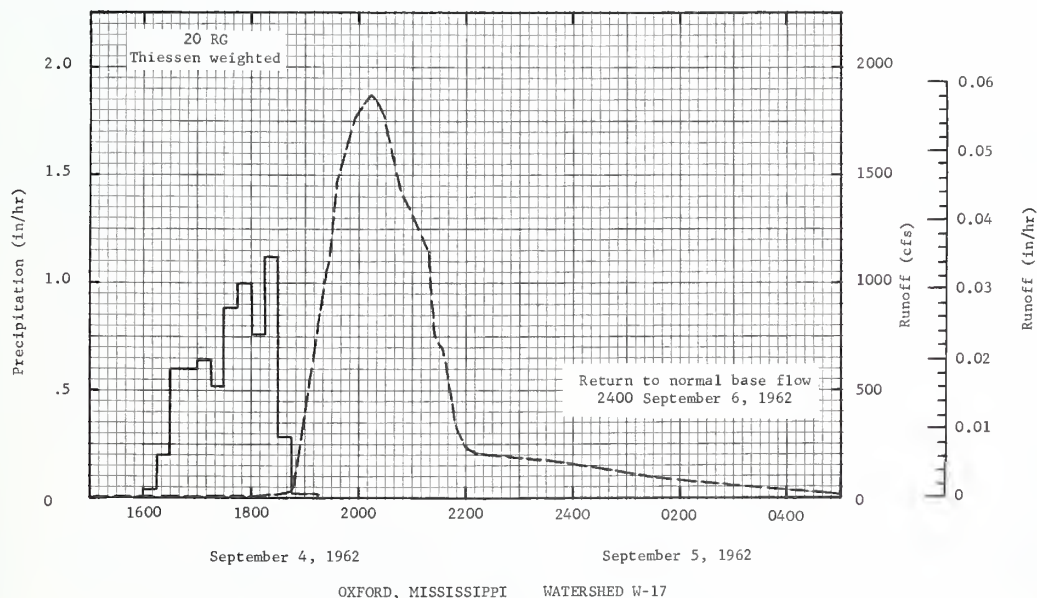
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHEO W-17	62.05
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	96.95	23.29	29.12	23.41	32.22	33.65	10.56	10.82	10.24	13.65	9.38	10.52		
2	32.82	22.00	28.20	17.04	16.26	19.15	10.56	12.36	9.95	10.42	9.38	10.81		
3	22.92	19.48	25.07	14.39	14.01	38.79	12.02	12.99	8.01	7.72	9.67	10.81		
4	20.31	17.81	21.58	14.01	13.66	228.98	11.71	12.66	175.59	7.44	9.39	10.24		
5	175.78	18.64	20.30	13.69	13.33	24.24	16.88	12.34	26.46	7.44	8.00	9.95		
6	103.05	18.24	19.47	12.99	12.66	14.83	16.66	11.71	10.26	6.89	7.45	9.95		
7	32.80	16.61	17.82	13.66	12.99	13.33	38.17	10.54	9.10	12.80	7.72	9.95		
8	22.87	16.61	25.73	15.91	12.99	15.91	9.96	9.38	10.26	9.38	8.83	9.95		
9	19.89	17.01	32.46	14.92	12.66	14.31	9.10	8.83	17.45	8.83	9.66	9.66		
10	18.63	15.50	30.87	14.76	12.99	11.87	8.83	8.28	12.70	7.72	9.66	10.24		
11	17.82	13.66	26.39	511.09	12.67	50.87	8.28	9.70	7.17	7.72	10.24	10.24		
12	17.01	13.66	19.91	154.44	12.02	23.93	7.44	10.26	8.00	8.83	10.52	10.24		
13	17.41	13.66	16.63	33.49	10.84	10.52	7.72	8.83	8.83	9.10	10.23	10.24		
14	167.14	13.66	15.46	21.18	9.66	10.82	8.55	9.39	15.94	9.38	10.52	10.26		
15	438.70	17.54	15.46	18.63	9.66	11.11	8.55	10.82	12.41	10.84	10.24	9.10		
16	38.69	17.22	15.46	17.43	9.66	10.52	9.39	11.11	15.58	229.22	9.66	9.10		
17	28.38	14.00	15.84	16.61	9.66	10.52	9.67	13.13	10.52	17.25	10.84	9.10		
18	24.17	34.43	15.84	16.23	9.95	10.24	9.67	12.28	10.52	8.83	10.84	9.38		
19	23.74	25.69	15.84	15.46	10.23	10.24	9.67	8.00	10.52	8.83	9.66	9.11		
20	21.58	17.82	20.28	15.46	9.95	11.11	9.38	8.00	10.81	9.38	9.95	9.39		
21	20.31	29.99	32.18	14.06	9.95	12.03	9.95	8.83	10.81	9.66	9.95	10.82		
22	707.05	24.96	17.84	14.06	10.52	11.73	10.23	9.68	12.06	8.83	9.38	10.52		
23	522.91	2261.96	18.24	14.39	10.24	10.81	10.23	10.81	12.06	9.12	9.10	10.23		
24	69.25	82.12	17.41	13.31	9.95	11.99	38.33	12.86	11.42	10.23	9.10	9.95		
25	206.53	422.05	18.22	13.31	9.95	19.23	220.06	36.25	11.13	9.95	9.38	9.11		
26	92.90	277.51	15.02	12.67	9.38	16.09	16.75	15.86	9.39	10.24	9.66	8.83		
27	184.88	564.96	12.36	12.34	9.38	15.25	12.36	9.38	9.39	11.11	10.54	8.83		
28	70.88	115.69	12.99	11.73	9.66	21.12	12.03	9.95	10.23	11.41	11.41	9.98		
29	34.42	-----	12.34	10.52	10.84	16.70	12.03	9.95	9.67	10.54	10.54	11.71		
30	29.17	-----	14.04	12.61	22.50	13.74	11.41	9.66	9.10	9.95	9.95	10.84		
31	25.05	-----	170.63	-----	10.93	-----	10.82	10.24	-----	9.67	-----	9.66		
MEAN	106.58	148.06	24.80	36.79	12.30	24.12	19.25	11.44	16.85	16.84	9.69	9.95		
INCHES	2.45	3.07	.57	.82	.28	.54	.44	.26	.37	.39	.22	.23		

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0007415. QUALITY OF RECORDS: GOOD.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-17				62.05											
ANTECEDENT CONOITIONS			RAINFALL				RUNOFF															
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)												
Event of September 4-6, 1962 4/																						
9-4	1 1/2/.04	3/.0043	9-4	RG	15		9-4	1758	9.66	.0000												
				1630	.00			1846	31.95	.0005												
				1641	1.36	.25		1906	579.92	.0036												
				1546	2.52	.46		1918	889.00	.0082												
				1650	.45	.49		1926	1130.00	.0123												
				1739	.02	.51																
				1754	1.28	.83		1934	1467.28	.0177												
				1813	.63	1.03		1944	1622.31	.0256												
				1824	4.15	1.79		1956	1770.00	.0361												
				1828	.60	1.83		2012	1875.00	.0511												
				1834	.40	1.87		2026	1784.00	.0643												
				1853	.19	1.93		2046	1433.59	.0809												
				RG	17			2118	1142.00	.1021												
				9-4	1618			.00	2124	759.76	.1050											
					1927			1.04	2132	690.00	.1080											
				9-4	1600	.00		22	AVG 1/5/	.00	2146	381.85	.1119									
																1642	.00	2158	258.48	.1139		
																1852	.16	2214	206.15	.1158		
			20 RG													2246	195.48	.1191				
			1615				.04									.01	2330	176.89	.1233			
1630	.20	.06	2400				155.28									.1259						
1645	.60	.21	9-5				0132									94.55	.1318					
1700	.60	.36					0300									52.00	.1351					
1715	.64	.52					0432									30.05	.1370					
1730	.52	.65					0602									22.00	.1382					
9-4	1600	.00	22	AVG 1/5/	.00	2146	381.85	.1119														
											1745	.88	.87	9-6	1500	12.02	.1422					
											1800	1.00	1.12		2400	11.40	.1455					
											1815	.76	1.31		2400	6/9.10	.1531					
											1830	1.12	1.59									
											1845	.28	1.66									
											1900	.02	1.66									
											1915	.02	1.67									
											Watershed conditions: 20% of area in mature cotton and corn, fair cover; 13% in pasture and 42% idle, fair to good cover; 21% in woods, good cover; 2% in bare gullies; 2% urban.											

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000309. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59. USDA, MISC. PUB. 945, P. 62.5-5. 1/ RAIN GAGES 2, 4-9, 13-15, 17-20, 22, 25, AND 28-31 THIESEN WEIGHTED. 2/ RAINFALL PRIOR TO 1220 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ RUNOFF PRIOR TO 1630 ON 9-4-62. 4/ ISOHYETAL MAP ON P. 62.11-5. 5/ RAINFALL FOR GAGE 2 IS LISTED ON P. 62.6-3; GAGES 4, 5, 9, 25, 29, AND 31 ON P. 62.4-3; GAGE 6 ON P. 62.8-3; GAGES 7 AND 18 ON P. 62.1-3; GAGES 8 AND 19 ON P. 62.2-3; GAGES 13, 14, AND 20 ON P. 62.3-3; GAGE 28 ON P. 62.17-2; AND GAGE 30 ON P. 62.7-3. 6/ NORMAL BASE FLOW.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000309. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA, MISC. PUB. 945, P. 62.5-5. 1/ RAIN GAGES 2, 4-9, 13-15, 17-20, 22, 25, AND 28-31 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1220 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ RUNOFF PRIOR TO 1630 ON 9-4-62. 4/ ISOHYETAL MAP ON P. 62.11-5. 5/ RAINFALL FOR GAGE 2 IS LISTED ON P. 62.6-3; GAGES 4, 5, 9, 25, 29, AND 31 ON P. 62.4-3; GAGE 6 ON P. 62.8-3; GAGES 7 AND 18 ON P. 62.1-3; GAGES 8 AND 19 ON P. 62.2-3; GAGES 13, 14, AND 20 ON P. 62.3-3; GAGE 28 ON P. 62.17-2; AND GAGE 30 ON P. 62.7-3. 6/ NORMAL BASE FLOW.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI AREA—243 ACRES								WATERSHED W-19 62.06		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 p1/ Q	6.82 2.45	7.25 2.57	2.90 .09	3.09 .22	2.21 .00	4.34 .00	5.06 .33	3.24 .14	2.80 .00	2.69 .19	1.56 .00	1.61 .01	43.57 6.00			
STA AV2/P (57-62) Q	4.47 .93	5.33 1.11	4.32 .59	4.48 .44	3.41 .30	4.40 .20	4.37 .16	3.76 .17	4.71 .53	2.28 .05	4.48 .40	4.82 .56	50.83 5.44			
MEAN P3/ 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.66	2-23	.57	2-23	.91	2-23	1.18	2-23	1.77	2-23	1.93	2-23	1.99	2-23	2.58
MAXIMUMS FOR PERIOD OF RECORD																
1957 to 1962	9-19 1958	1.05	9-19 1958	.66	2-23 1962	.91	2-23 1962	1.18	2-23 1962	1.77	2-23 1962	1.93	9-19 1958	2.14	1-28 1957	3.23
NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 2% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 68% in pasture and idle land, good cover April to October with fair cover remainder of year; 29% in woods; 1% in bare gullies. 1/ Monthly precipitation from rain gage 2. 2/ Precipitation and runoff records began Jan. 1957. 3/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.																

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	62.06
1	.00	.00	.00	.00	.24	.16	.00	.00	.00	.50	.00	.00	
2	.00	.00	.00	.00	.00	.40	.89	.29	.00	.00	.00	.00	
3	.00	.00	.00	.00	.00	.42	.00	.00	.00	.00	.05	.00	
4	.00	.00	.00	.00	.00	.51	.00	.00	.49	.00	.00	.00	
5	1.30	.11	.00	.15	.00	.00	.05	.00	.00	.00	.00	.04	
6	.02	.00	.00	.05	.00	.00	.40	.00	.00	.00	.00	.00	
7	.00	.00	.00	.00	.00	.50	.00	.00	.00	.75	.00	.00	
8	.00	.06	.42	.19	.00	.15	.00	.00	.20	.00	.20	.00	
9	.15	.00	.04	.00	.00	.00	.00	.00	.55	.00	.00	.00	
10	.00	.00	.31	.90	.00	.80	.00	.00	.00	.00	.00	.00	
11	.00	.00	.00	.48	.00	.08	.55	.00	.00	.00	.19	.00	
12	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	
13	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	
14	1.20	.00	.00	.00	.00	.00	.00	.00	.68	.00	.00	.00	
15	.11	.56	.00	.00	.00	.00	.00	.00	.15	.20	.00	.00	
16	.00	.00	.00	.00	.01	.00	.02	.00	.00	.80	.00	.00	
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45	.04	
18	.00	.46	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	
19	.06	.00	.00	.00	.00	.16	.00	.00	.00	.00	.19	.00	
20	.06	.02	.76	.00	.00	.00	.00	.00	.00	.37	.00	.01	
21	.03	.49	.00	.00	.00	.00	.00	.00	.00	.07	.15	.59	
22	2.56	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
23	.13	3.60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
24	.11	.00	.00	.00	.00	.31	.45	1.65	.05	.00	.00	.45	
25	.44	1.28	.27	.00	.00	.68	2.10	1.15	.20	.00	.28	.00	
26	.53	.24	.00	.00	.00	.17	.00	.00	.40	.00	.00	.04	
27	.12	.43	.00	.31	.00	.00	.00	.00	.00	.00	.00	.00	
28	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.29	
29	.00	-----	.00	.00	.80	.00	.00	.00	.00	.00	.00	.15	
30	.00	-----	.96	.86	1.16	.00	.00	.15	.00	.00	.00	.00	
31	.00	-----	.14	-----	.00	-----	.60	-----	.00	-----	-----	.00	
TOTAL	6.82	7.25	2.90	3.09	2.21	4.34	5.06	3.24	2.80	2.69	1.56	1.61	
STA AV	4.47	5.33	4.32	4.48	3.41	4.40	4.37	3.76	4.71	2.28	4.48	4.82	

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES FROM RAIN GAGE 2. STA AV FOR 6-YR 1957-62.

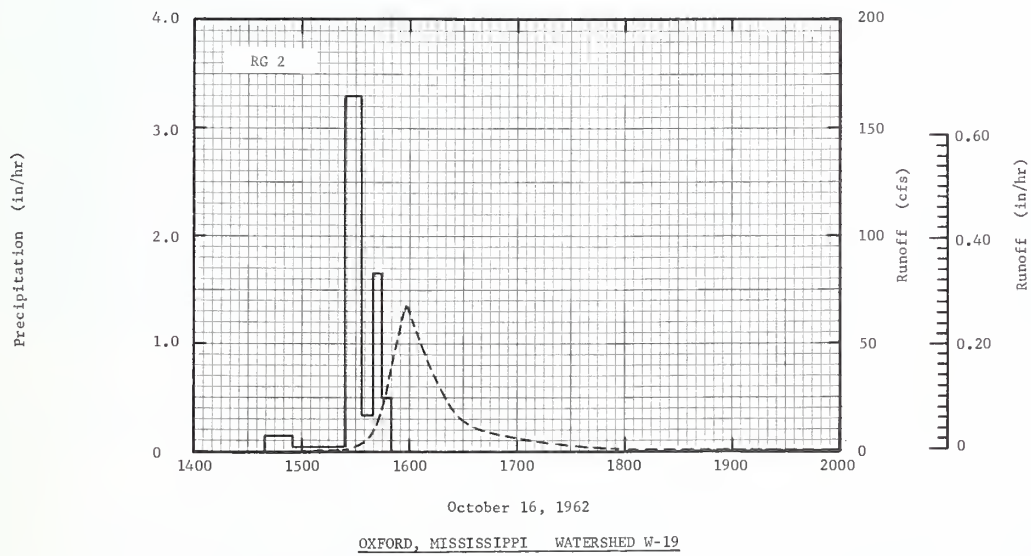
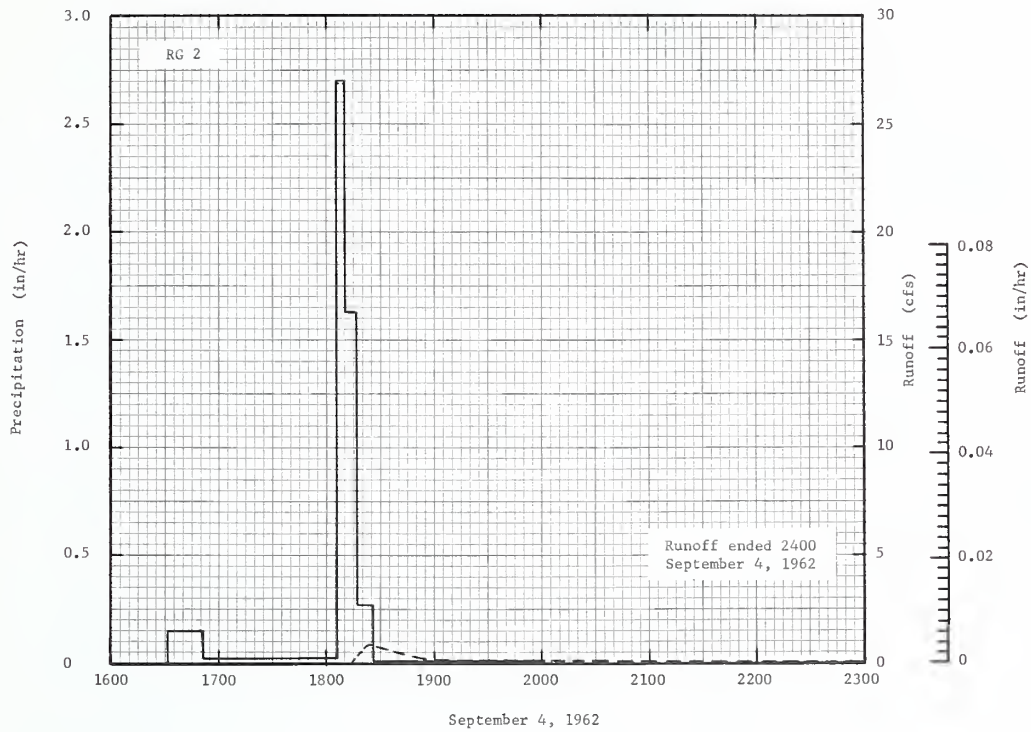
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	62.06
1	.61	.00	.07	.00	.04	.00	.00	.00	.00	.00	.00	.00	
2	.07	.00	.04	.00	.00	.01	.00	.00	.00	.00	.00	.00	
3	.05	.00	.04	.00	.00	.01	.00	.00	.00	.00	.00	.00	
4	.04	.00	.04	.00	.00	.01	.00	.00	.02	.00	.00	.00	
5	2.90	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	
6	.30	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	
7	.09	.00	.01	.00	.00	.00	.00	.00	.00	.08	.00	.00	
8	.06	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	
9	.08	.00	.03	.00	.00	.00	.00	.00	.02	.00	.00	.00	
10	.04	.00	.03	1.32	.00	.00	.00	.00	.00	.00	.00	.00	
11	.04	.00	.01	.45	.00	.01	.00	.00	.00	.00	.00	.00	
12	.05	.00	.01	.31	.00	.00	.00	.00	.00	.00	.00	.00	
13	.07	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	
14	3.30	.00	.00	.05	.00	.00	.00	.00	.02	.00	.00	.00	
15	.97	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	
16	.01	.00	.00	.01	.00	.00	.00	.00	.02	1.89	.00	.00	
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	
18	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
20	.00	.00	.26	.00	.00	.00	.00	.00	.00	.00	.00	.00	
21	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	
22	12.72	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
23	1.54	19.58	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
24	.50	.73	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	
25	.68	4.26	.01	.00	.00	.00	3.41	1.24	.00	.00	.01	.02	
26	.53	.94	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	
27	.40	.58	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
28	.11	.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	
29	.03	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	
30	.01	-----	.03	.10	.01	.00	.00	.00	.00	.00	.00	.00	
31	.00	-----	.36	-----	.00	-----	.00	.00	-----	.00	-----	.00	
MEAN	.81	.94	.03	.08	.00	.00	.11	.04	.00	.06	.00	.00	
INCHES	2.45	2.57	.09	.22	.00	.00	.33	.14	.00	.19	.00	.01	

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.09795. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENTS			OXFORD, MISSISSIPPI				WATERSHED W-19				62.06
ANTECEDEENT CONOITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4, 1962 1/											
9-4	.00	.0000	9-4	RC	2		9-4				
				1631	.00	.00		1814	.00	.0000	
				1651	.15	.05		1824	.85	.0001	
				1806	.02	.07		1834	.52	.0005	
				1810	2.70	.25		1854	.17	.0009	
				1817	1.63	.44		1932	.02	.0011	
				1826	.27	.48					
				2001	.01	.49		2400	.00	.0013	
Watershed conditions: 2% of area in mature cotton and corn, fair cover; 4% in pasture and 64% idle, fair to good cover; 29% in woods, good cover; 1% bare gullies.											
Event of October 16-17, 1962											
10-16	.00	.0000	10-16	RG	2		10-16				
				1439	.00	.00		1500	.00	.0000	
				1455	.15	.04		1506	.37	.0000	
				1523	.04	.06		1526	.47	.0004	
				1533	3.30	.61		1538	8.31	.0040	
				1540	.34	.65		1546	23.44	.0126	
				1544	1.65	.76		1558	68.39	.0499	
				1550	.50	.81		1612	41.10	.1020	
								1626	17.61	.1298	
								1710	3.99	.1621	
10-17							1754	1.84	.1708		
							1908	.68	.1772		
							2226	.19	.1830		
							2400	.14	.1840		
							0226	.04	.1849		
							0600	.00	.1852		
Watershed conditions: 2% of area in mature cotton and corn, fair cover; 4% in pasture and 64% idle, fair to good cover; 29% in woods, good cover; 1% bare gullies.											

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00408. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. FOR MAP OF WATERSHED, SEE HYDROLOCIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.6-5. 1/ ISOHYETAL MAP ON P. 62.11-5.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00408. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.6-5. 1/ ISOHYETAL MAP ON P. 62.11-5.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI AREA—512 ACRES								WATERSHED W-241 ^{1/} 62.07	
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962 P ^{2/}	6.52	6.87	2.66	3.17	2.11	6.17	5.09	2.57	3.07	2.92	1.99	1.46	44.60		
Q	3.75	4.05	.75	1.09	.04	.40	.24	.06	.01	.06	.00	.00	10.45		
STA AV ^{3/} P	4.45	5.25	4.36	4.27	3.89	4.40	4.20	3.12	4.42	2.61	4.74	4.58	50.29		
(57-62) Q	1.50	1.79	.98	.94	.54	.21	.13	.08	.22	.09	.64	.77	7.89		
MEAN P ^{4/} 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	1.04	2-23	.90	2-23	1.36	2-23	1.64	2-23	1.86	2-23	2.06	2-23	2.26	2-23	3.34
MAXIMUMS FOR PERIOD OF RECORD																
19 57 to 19 62	2-23 1962	1.04	2-23 1962	.90	2-23 1962	1.36	2-23 1962	1.64	2-23 1962	1.86	1-31 1957	2.08	1-30 1957	3.16	1-28 1957	4.37

NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 3% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 35% in pasture and idle land, good cover April to October with fair cover remainder of year; 59% in woods, 3% in bare gullies. ^{1/} About 6% of area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from rain gages 4, 30, and 31. ^{3/} Precipitation and runoff records began Jan. 1957. ^{4/} Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

AREA: (Revision) Drainage area changed from 511 to 512 acres after December 31, 1961.

SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Ruston fine sandy loam to sandy clay loam	64	0-4	Weak fine crumb	Moderate- ly rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderate- ly rapid	Rapid
Collins silt loam	10	0-8	Weak fine granular	Moderate- ly rapid	-----	-----	6	Moderate- ly rapid	Rapid
Providence silt loam and silty clay loam	13	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow
Grenada silt loam	7	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Loring silt loam to silty clay loam	6	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid

GEOLOGY: About 81% of the watershed is occupied by the Kosciusko formation, 13% is in the Tallahatta formation, and 6% is valley alluvial material. No structural interference occurs within the watershed. Although several relatively large clay lenses are known to exist in the area, the areal extent and probable affect of these lenses on the hydrology of the watershed is unknown. The dip is to the west at 8 to 10 feet per mile and the water table is more than 50 feet below the stream bed. Perched water bodies most likely occur above the clay lenses. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHEO W-24	62.07
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.18	.54	.00	.00	.00	.44	.00	.00		
2	.00	.00	.00	.00	.00	.28	.00	.38	.03	.00	.01	.00		
3	.00	.00	.00	.00	.00	.27	.00	.00	.00	.00	.02	.00		
4	.00	.00	.00	.00	.00	1.58	.00	.00	.75	.00	.00	.00		
5	.99	.12	.00	.11	.00	.00	.30	.00	.00	.00	.00	.06		
6	.03	.00	.00	.17	.00	.00	1.16	.00	.00	.00	.00	.00		
7	.00	.00	.00	.00	.00	.04	.00	.00	.00	.75	.00	.00		
8	.00	.07	.44	.24	.00	.29	.00	.00	.16	.00	.23	.00		
9	.21	.00	.04	.00	.00	.00	.00	.00	.48	.00	.00	.00		
10	.00	.00	.27	1.13	.00	.61	.00	.00	.00	.00	.00	.00		
11	.00	.00	.03	.60	.00	.27	.68	.00	.00	.00	.59	.00		
12	.00	.00	.00	.07	.00	.19	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00		
14	1.20	.00	.00	.00	.00	.00	.00	.00	.60	.53	.00	.00		
15	.10	.54	.00	.00	.00	.00	.00	.00	.39	.09	.00	.00		
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.81	.00	.00		
17	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.49	.04		
18	.00	.61	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00		
19	.06	.00	.00	.00	.00	.24	.00	.00	.00	.00	.15	.00		
20	.05	.01	.49	.00	.00	.00	.00	.00	.00	.24	.00	.00		
21	.12	.41	.00	.00	.00	.00	.00	.00	.00	.06	.15	.47		
22	2.24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	.10	3.14	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00		
24	.15	.00	.00	.00	.00	.85	.91	.18	.04	.00	.00	.48		
25	.52	.79	.34	.00	.00	.46	1.59	1.64	.18	.00	.29	.00		
26	.44	.88	.00	.00	.00	.55	.00	.00	.36	.00	.00	.04		
27	.31	.30	.00	.21	.00	.00	.00	.00	.00	.00	.00	.00		
28	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.21		
29	.00	-----	.00	.09	.00	.00	.00	.00	.00	.00	.00	.16		
30	.00	-----	.91	.58	1.84	.00	.00	.29	.00	.00	.00	.00		
31	.00	-----	.14	-----	.00	-----	.45	.02	-----	.00	-----	.00		
TOTAL	6.52	6.87	2.66	3.17	2.11	6.17	5.09	2.57	3.07	2.92	1.99	1.46		
STA AV	4.45	5.25	4.36	4.27	3.89	4.40	4.20	3.12	4.42	2.61	4.74	4.58		

NOTES:

FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES ARE THIESSEN WEIGHTED FROM RAIN GAGES 4, 30 AND 31. STA AV FOR 6-YR 1957-62.

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHEO W-24	62.07
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	2.27	.85	1.80	.39	.43	.12	.00	.00	.00	.00	.00	.00		
2	.89	.63	1.50	.24	.00	.00	.00	.00	.00	.00	.00	.00		
3	.50	.40	1.01	.05	.00	.00	.00	.00	.00	.00	.00	.00		
4	.45	.30	.85	.07	.00	6.44	.00	.00	.01	.00	.00	.00		
5	3.53	.30	.77	.13	.00	.36	.00	.00	.00	.00	.00	.00		
6	1.73	.40	.63	.13	.00	.00	2.42	.00	.00	.00	.00	.00		
7	.45	.45	.56	.18	.00	.00	.18	.00	.00	.18	.00	.00		
8	.28	.39	.40	.16	.00	.00	.00	.00	.00	.00	.00	.00		
9	.52	.39	.47	.08	.00	.00	.00	.00	.00	.00	.00	.00		
10	7.57	.28	.58	1.50	.00	.00	.00	.00	.00	.00	.00	.00		
11	7.63	.28	.45	3.26	.00	.12	.00	.00	.00	.00	.00	.00		
12	.22	.24	.50	1.95	.00	.00	.00	.00	.00	.00	.00	.00		
13	1.03	.14	.45	.66	.00	.00	.00	.00	.00	.00	.00	.00		
14	8.32	.20	.39	.28	.00	.00	.00	.00	.09	.04	.00	.00		
15	4.76	.94	.26	.14	.00	.00	.00	.00	.01	.00	.00	.00		
16	.16	.57	.18	.20	.00	.00	.00	.00	.00	1.05	.00	.00		
17	.01	.01	.18	.24	.00	.00	.00	.00	.00	.00	.01	.00		
18	.01	3.43	.22	.24	.00	.00	.00	.00	.00	.00	.00	.00		
19	.01	1.88	.35	.19	.00	.00	.00	.00	.00	.00	.00	.00		
20	.00	.50	.81	.07	.00	.00	.00	.00	.00	.00	.00	.00		
21	.00	3.41	.42	.06	.00	.00	.00	.00	.00	.00	.00	.00		
22	18.83	1.04	.06	.14	.00	.00	.00	.00	.00	.00	.00	.00		
23	5.46	43.86	.14	.12	.00	.00	.00	.00	.00	.00	.00	.00		
24	1.85	4.45	.16	.07	.00	.03	.00	.00	.00	.00	.00	.00		
25	3.74	7.16	.10	.10	.00	.81	2.63	1.27	.00	.00	.00	.01		
26	2.33	5.78	.16	.08	.00	.54	.00	.00	.00	.00	.00	.00		
27	4.20	6.50	.13	.03	.00	.20	.00	.00	.00	.00	.00	.00		
28	1.86	2.32	.03	.11	.00	.00	.00	.00	.00	.00	.00	.00		
29	.63	-----	.06	6.32	.00	.00	.00	.00	.00	.00	.00	.03		
30	.71	-----	.38	6.32	.51	.00	.00	.00	.00	.00	.00	.00		
31	.92	-----	2.24	-----	.00	-----	.00	.00	-----	.00	-----	.00		
MEAN	2.61	3.11	.52	.78	.03	.29	.17	.04	.00	.04	.00	.00		
INCHES	3.75	4.05	.75	1.09	.04	.40	.24	.06	.01	.06	.00	.00		

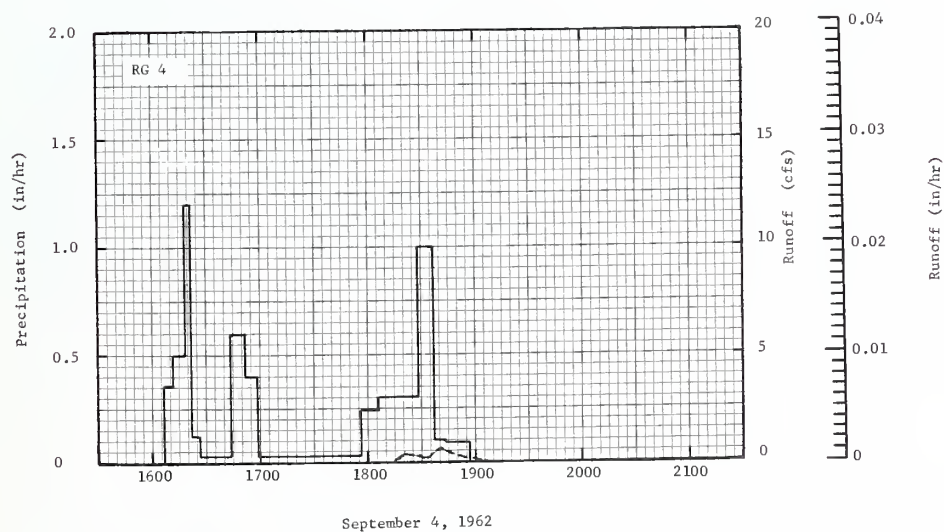
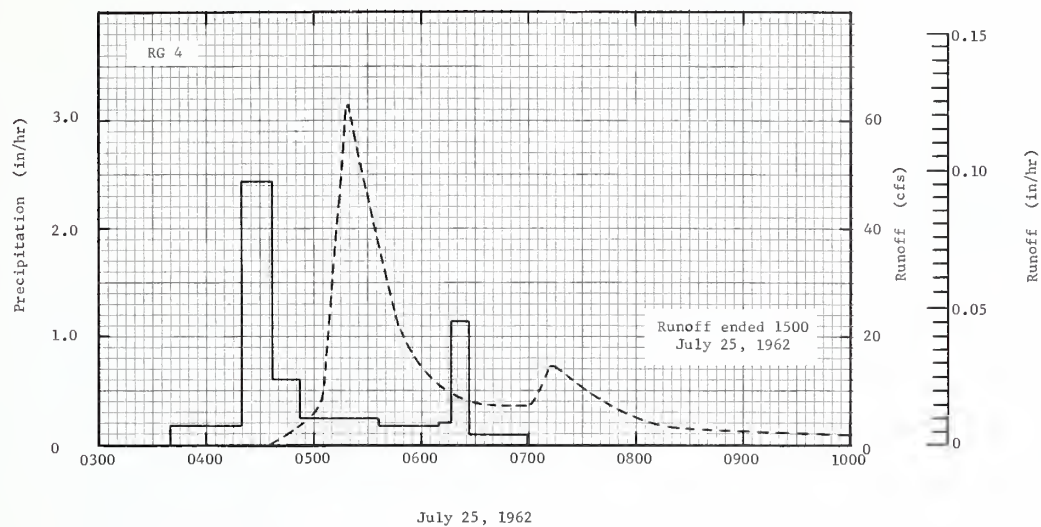
NOTES:

TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.046468. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENTS			OXFORD, MISSISSIPPI				WATERSHED W-24				62.07	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of July 25, 1962												
7-25	.00	.0000	7-25	RG	4		7-25					
				0338	.00	.00		0434	.00	.0000		
				0418	.18	.12		0446	1.90	.0003		
				0437	2.46	.90		0504	9.18	.0035		
				0442	.60	.95		0510	29.39	.0072		
				0452	.60	1.05		0518	63.00	.0191		
				0536	.23	1.22		0546	23.45	.0580		
				0608	.19	1.32		0626	8.37	.0786		
				0617	.20	1.35		0700	7.58	.0873		
				0627	1.14	1.54		0712	14.47	.0915		
			0659	.09	1.59	0716	14.00	.0933				
			7-25	RG	30		0746	7.58	.1037			
				0325		.00	0814	3.59	.1087			
			7-25	0804		1.47	1114	.39	.1202			
				RG	31		1500	.00	.1216			
			7-25	0329		.00						
				0723		1.58						
				3 RG	AVG 1/							
				0315	.00	.00						
				0330	.04	.01						
0345	.12	.04										
0400	.12	.07										
0415	.68	.24										
0430	2.12	.77										
0445	.92	1.00										
7-25	0500	.32	1.08									
	0515	.24	1.14									
	0530	.20	1.19									
	0545	.20	1.24									
	0600	.24	1.30									
	0615	.36	1.39									
	0630	.48	1.51									
	0645	.04	1.52									
	0700	.04	1.53									
	0715	.00	1.53									
Event of September 4, 1962 2/												
9-4	.00	.0000	9-4	RG	4		9-4					
				1607	.00	.00		1814	.00	.0000		
				1612	.36	.03		1820	.39	.0000		
				1618	.50	.08		1834	.17	.0000		
				1622	1.20	.16		1840	.62	.0001		
				1627	.12	.17		1908	.00	.0004		
				1644	.04	.18						
				1652	.60	.26						
				1658	.40	.30						
				1756	.03	.33						
			1806	.24	.37							
			9-4	1828	.30	.48						
				1837	1.00	.63						
				1843	.10	.64						
				1857	.09	.66						
				3 RG	AVG 1/3/							
				1600	.00	.00						
				1615	.12	.03						
				1630	.52	.16						
				1645	.24	.22						
1700	.48	.34										
9-4	1715	.04	.35									
	1730	.04	.36									
	1745	.04	.37									
	1800	.32	.45									
	1815	.32	.53									
	1830	.40	.63									
	1845	.48	.75									
	Watershed conditions: 3% of area in maturing cotton and corn, fair cover; 3% in pasture, 32% idle and 59% in woods, good cover; 3% in bare gullies.											
	Watershed conditions: 3% of area in mature cotton and corn, fair cover; 3% in pasture, and 32% idle, fair to good cover; 59% in woods, good cover; 3% in bare gullies.											

NOTES: TO CONVERT RUNOFF IN GFS TO IN/HR, MULTIPLY BY 0.001937. FOR ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.7-4. 1/ RAIN GAGES 4, 30, AND 31 THIESSEN WEIGHTED. 2/ ISOHYETAL MAP ON P. 62.11-5. 3/ RAINFALL FOR GAGE 31 LISTED ON P. 62.4-3.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.001937. FOR ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.7-4. 1/ RAIN GAGES 4, 30, AND 31 THIESSEN WEIGHTED. 2/ ISOHYETAL MAP ON P. 62.11-5. 3/ RAINFALL FOR GAGE 31 LISTED ON P. 62.4-3.



OXFORD, MISSISSIPPI WATERSHED W-24

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI AREA—1,080 ACRES (1.69 SQ. MILES)				WATERSHED W-28 ¹ / ₁ 62.08			
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P ² / ₁	5.82	7.74	2.96	3.43	2.13	6.71	5.54	2.44	5.42	1.53	1.56	1.48	46.76
Q	.61	1.77	.15	.14	.00	.26	.12	.02	.12	.00	.00	.00	3.19
STA AV ³ / ₁ /P	4.31	5.30	4.37	4.14	3.62	4.54	4.18	2.44	4.86	2.66	4.87	4.54	49.83
(57-62) Q	.57	.62	.27	.29	.16	.09	.09	.00	.18	.05	.20	.20	2.72
MEAN P ⁴ / ₁ / 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.33	2-23	.29	2-23	.47	2-23	.70	2-23	.82	2-23	.90	2-23	.95	2-23	1.78

MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO 19 62	9-9 1959	.58	9-9 1959	.42	9-9 1959	.54	2-23 1962	.70	1-31 1957	.92	1-31 1957	1.45	1-30 1957	2.02	1-27 1957	2.68

NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 22% in cultivation (cotton and corn), fair cover November to March, poor cover in April and May improving to good by mid-July; 58% in pasture and idle land, good cover April to October with fair cover remainder of year; 26% in woods; 4% in bare gullies. 1/ Approximately 60% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 5, 6, and 7. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Providence silt loam and silty clay loam	45	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow
Ruston fine sandy loam to sandy clay loam	38	0-4	Weak fine crumb	Moderate- ly rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderate- ly rapid	Rapid
Grenada silt loam	17	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid

GEOLOGY: About 88% of the surface area is occupied by the Kosciusko formation, 11% is in the Tallahatta formation and 1% is valley alluvial material. A normal westerly dip of about 8 to 10 feet per mile has been increased slightly and changed to a southeasterly direction by a fault along the southeastern boundary of the watershed. Ground water flow has also been changed from westerly to southeasterly. A more detailed description of the geological formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI				WATERSHED W-28				62-08
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.17	.88	.00	.00	.00	.21	.00	.00		
2	.00	.00	.00	.00	.00	.16	.00	.31	.00	.00	.00	.00		
3	.00	.00	.00	.00	.00	.44	.00	.00	.00	.00	.04	.00		
4	.00	.00	.00	.00	.00	1.24	.00	.00	2.20	.00	.00	.00		
5	1.42	.22	.00	.13	.00	.00	.15	.00	.00	.00	.00	.05		
6	.02	.00	.00	.15	.00	.00	1.05	.00	.00	.00	.00	.00		
7	.00	.00	.00	.00	.00	.14	.00	.00	.00	.55	.00	.00		
8	.00	.05	.51	.20	.00	.16	.00	.00	.42	.00	.22	.00		
9	.16	.02	.03	.00	.00	.00	.00	.00	.87	.00	.00	.00		
10	.00	.00	.29	.81	.00	.36	.00	.00	.00	.00	.00	.00		
11	.00	.00	.03	1.15	.00	1.56	.78	.00	.00	.00	.34	.00		
12	.00	.00	.00	.14	.00	.06	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00		
14	1.02	.00	.00	.00	.00	.00	.00	.00	.75	.01	.00	.00		
15	.09	.49	.00	.00	.00	.00	.00	.00	.57	.00	.00	.00		
16	.00	.00	.00	.00	.02	.00	.00	.00	.03	.44	.00	.00		
17	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.43	.04		
18	.00	.55	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00		
19	.05	.00	.00	.00	.00	.09	.00	.00	.00	.00	.13	.00		
20	.05	.05	.55	.00	.00	.00	.00	.00	.00	.26	.00	.00		
21	.09	.38	.00	.00	.00	.01	.00	.00	.00	.06	.10	.53		
22	1.55	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	.10	3.20	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00		
24	.12	.00	.00	.00	.00	.75	1.90	.03	.00	.00	.00	.48		
25	.46	1.01	.42	.00	.00	.63	1.23	1.45	.17	.00	.25	.00		
26	.39	1.38	.00	.00	.00	.21	.00	.00	.33	.00	.00	.01		
27	.30	.39	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00		
28	.00	.00	.00	.10	.00	.00	.01	.00	.00	.00	.00	.21		
29	.00	-----	.00	.00	.09	.02	.00	.00	.00	.00	.00	.16		
30	.00	-----	.95	.49	1.85	.00	.00	.50	.00	.00	.00	.00		
31	.00	-----	.18	-----	.00	-----	.42	.00	-----	.00	-----	.00		
TOTAL	5.82	7.74	2.96	3.43	2.13	6.71	5.54	2.44	5.42	1.53	1.56	1.48		
STA AV	4.31	5.30	4.37	4.14	3.62	4.54	4.18	2.44	4.86	2.66	4.87	4.54		

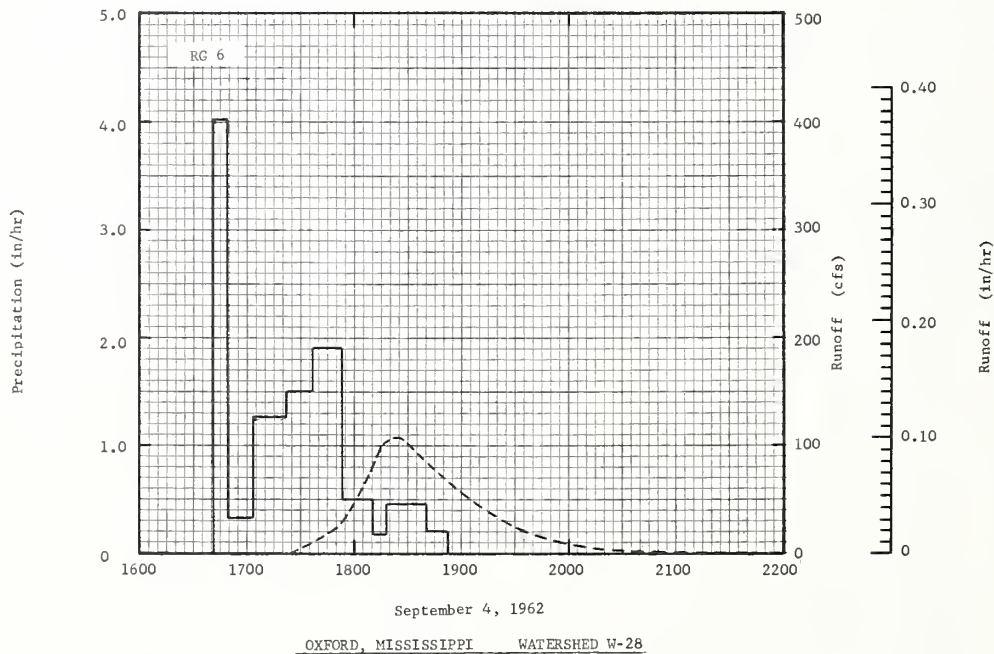
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 5, 6, AND 7. STA AV FOR 6-YR 1957-62.

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI				WATERSHED W-28				62-08
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	1.52	.10	.76	.00	.00	.97	.00	.00	.00	.00	.00	.00		
2	.37	.12	.56	.00	.00	.00	.00	.00	.00	.00	.00	.00		
3	.14	.12	.52	.00	.00	.00	.00	.00	.00	.00	.00	.00		
4	.10	.09	.43	.00	.00	3.13	.00	.00	5.25	.00	.00	.00		
5	3.61	.06	.33	.00	.00	.00	.00	.00	.00	.30	.00	.00		
6	.89	.07	.30	.00	.00	.00	.15	.00	.00	.00	.00	.00		
7	.19	.09	.25	.00	.00	.00	.01	.00	.00	.00	.00	.00		
8	.14	.10	.37	.00	.00	.00	.00	.00	.00	.00	.00	.00		
9	.14	.06	.35	.00	.00	.00	.00	.00	.08	.00	.00	.00		
10	.14	.00	.48	.30	.00	.00	.00	.00	.00	.00	.00	.00		
11	.14	.00	.15	3.86	.00	7.86	.00	.00	.00	.00	.00	.00		
12	.09	.00	.08	1.90	.00	.00	.00	.00	.00	.00	.00	.00		
13	.10	.00	.02	.26	.00	.00	.00	.00	.00	.00	.00	.00		
14	4.43	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00		
15	1.72	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00		
16	.06	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00		
17	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
18	.14	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
19	.15	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.13	.00	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00		
21	.13	.12	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00		
22	4.93	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	1.82	40.24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
24	.56	2.66	.00	.00	.00	.00	2.32	.00	.00	.00	.00	.00		
25	1.59	11.57	.14	.00	.00	.00	2.97	.92	.00	.00	.00	.00		
26	1.13	13.80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
27	1.81	9.84	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
28	.61	1.55	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
29	.43	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
30	.33	-----	.37	.00	.00	.00	.00	.00	.00	.00	.00	.00		
31	.19	-----	1.27	-----	.00	-----	.00	.00	-----	.00	-----	.00		
MEAN	.89	2.88	.22	.21	.00	.40	.18	.03	.18	.00	.00	.00		
INCHES	.61	1.77	.15	.14	.00	.26	.12	.02	.12	.00	.00	.00		

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0220387. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-28				62.08
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4, 1962											
9-4	1 1/2 / .08	.0000	9-4	RG	6		9-4				
				1641	.00	.00		1726	.00	.0000	
				1648	4.02	.47		1752	26.90	.0053	
				1703	.32	.55		1806	66.51	.0153	
				1722	1.26	.95		1816	104.20	.0283	
				1737	1.52	1.33		1826	109.30	.0446	
				1753	1.91	1.84		1836	94.00	.0601	
				1811	.50	1.99		1906	47.00	.0924	
				1818	.17	2.01		1928	27.86	.1050	
				1841	.47	2.19		2004	3.80	.1136	
				1853	.20	2.23		2046	.55	.1150	
				3 RG	AVG 1 3/4 /						
			9-4	1630	.00	.00		2146	.00	.1153	
				1645	1.16	.29					
				1700	.84	.50					
				1715	.96	.74					
				1730	1.36	1.08					
				1745	1.60	1.48					
				1800	1.20	1.78					
				1815	.40	1.88					
				1830	.48	2.00					
				1845	.40	2.10					
				1900	.08	2.12					
Watershed conditions: 12% of area in mature cotton and corn, fair cover; 10% in pasture and 48% idle, fair to good cover; 26% in woods, fair to good cover; 4% in bare gullies.											

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009183. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.8-5. 1/ RAIN GAGES 5, 6, AND 7 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1158 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ RAINFALL FOR GAGE 5 ON P. 62.4-3, AND GAGE 7 ON P. 62.1-3. 4/ ISOHYETAL MAP ON P. 62.11-5.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI AREA—20,000 ACRES (31.3 SQ. MILES)								WATERSHED W-321/ 62.10	
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962 P ² / Q	5.85 2.88	7.15 3.39	2.81 .28	3.91 .64	2.07 .07	5.64 .29	4.53 .24	2.32 .02	5.01 .28	3.09 .31	1.95 .00	1.65 .00	45.98 8.40		
STA AV ³ / (57-62) Q	4.37	5.35	4.49	4.83	4.17	4.18	4.06	2.66	4.99	2.49	4.89	4.76	51.24		
	1.50	1.95	1.30	1.15	.84	.26	.23	.10	.54	.14	.80	1.17	9.98		
MEAN P ⁴ / 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.57	2-23	.56	2-23	.83	2-23	1.88	2-23	2.11	2-23	2.34	2-23	2.40	2-23	3.30

MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO 19 62	2-23 1962	.57	2-23 1962	.56	2-23 1962	.83	2-23 1962	1.88	2-23 1962	2.11	2-23 1962	2.34	2-20 1961	2.98	1-27 1957	3.58

NOTES: Quality of records: P, good; Q, good. Watershed conditions: About 23% in cultivation (cotton and corn), fair cover November to March, poor cover in May and June improving to good by mid-July; 63% in pasture and idle land, good cover April to October with fair cover remainder of year; 12% in woods; 2% in bare gullies. 1/ About 12% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 10 rain gages. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Ruston fine sandy loam to sandy clay loam	46	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid
Collins silt loam	20	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid
Providence silt loam and silty clay loam	14	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow
Crenada silt loam	12	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Loring silt loam to silty clay loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid

CEOLOGY: About 76% of the surface area is occupied by the Kosciusko formation, 11% is in the Tallahatta formation and 13% is valley alluvial material. A normal westerly dip of the stratigraphic units and the ground-water piezo-metric gradient has been changed to a southerly direction in the southern one-third of the watershed by a fault along the southern boundary. The ground water level is only a few feet below the stream bed along the lower reaches of the main channel. Intermittent base flow occurs in the main channel below the gaging station. A more detailed description of the geologic formations and ground-water conditions is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Ceology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Ceology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-32	62.10
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.17	.34	.00	.00	.01	.48	.00	.00		
2	.00	.00	.00	.00	.00	.85	.24	.32	.01	.00	.00	.00		
3	.00	.00	.00	.00	.00	.85	.00	.00	.00	.00	.00	.00		
4	.00	.00	.00	.00	.00	.54	.00	.00	1.71	.00	.00	.00		
5	.94	.24	.00	.12	.00	.00	.71	.00	.00	.00	.00	.00		.05
6	.04	.00	.00	.11	.00	.01	.08	.00	.00	.00	.00	.00		.00
7	.00	.00	.00	.00	.00	.07	.00	.00	.00	.71	.00	.00		.00
8	.00	.05	.54	.19	.00	.17	.00	.00	.45	.00	.21	.00		.00
9	.17	.00	.02	.00	.00	.01	.00	.00	1.00	.00	.00	.00		.00
10	.00	.00	.29	.59	.00	.26	.00	.00	.00	.00	.00	.00		.00
11	.00	.00	.02	1.38	.00	.89	.36	.00	.00	.00	.51	.00		.00
12	.00	.00	.00	.13	.00	.01	.00	.00	.00	.00	.00	.00		.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00		.00
14	1.12	.00	.00	.00	.00	.00	.00	.00	.97	.00	.00	.00		.00
15	.06	.55	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00		.00
16	.00	.00	.00	.00	.06	.00	.00	.00	.16	1.28	.00	.02		.02
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.51	.02		.02
18	.00	.53	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00		.00
19	.05	.00	.00	.00	.00	.10	.00	.00	.00	.00	.13	.00		.00
20	.05	.07	.47	.00	.00	.00	.00	.00	.00	.49	.00	.00		.00
21	.13	.28	.00	.00	.00	.10	.00	.00	.00	.13	.13	.56		.56
22	1.78	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00
23	.20	3.39	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00		.00
24	.12	.00	.00	.00	.00	.65	1.46	.66	.00	.00	.00	.52		.52
25	.45	.93	.36	.00	.00	.60	1.48	.88	.13	.00	.36	.00		.00
26	.49	.69	.00	.00	.00	.13	.00	.00	.41	.00	.00	.02		.02
27	.25	.41	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00		.00
28	.00	.00	.00	.07	.00	.00	.13	.00	.00	.00	.00	.29		.29
29	.00	-----	.00	.00	.45	.06	.00	.00	.00	.00	.00	.17		.17
30	.00	-----	.94	1.00	1.39	.00	.00	.25	.00	.00	.00	.00		.00
31	.00	-----	.17	-----	.00	-----	.07	.06	-----	.00	-----	.00		.00
TOTAL	5.85	7.15	2.81	3.91	2.07	5.64	4.53	2.32	5.01	3.09	1.95	1.65		
STA AV	4.37	5.35	4.49	4.83	4.17	4.18	4.06	2.66	4.99	2.49	4.89	4.76		

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION THIESSEN WEIGHTED FROM GAGES 3, 10-14, 20, 21, 24, AND 26. STA AV FOR 6-YR 1957-62.

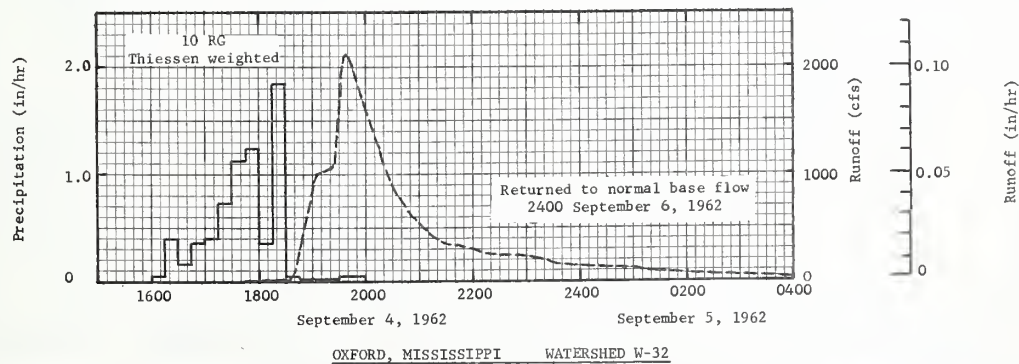
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-32	62.10
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	88.45	5.68	8.74	2.42	48.95	.14	.03	.01	.00	.02	.00	.00		.00
2	20.40	4.25	3.88	.71	1.62	12.02	.03	.00	.00	.00	.00	.00		.00
3	9.44	4.09	2.61	.24	.27	44.01	.01	.00	.00	.00	.00	.00		.00
4	4.60	4.09	2.00	.06	.09	60.85	.00	.01	146.07	.00	.00	.00		.00
5	151.43	5.06	1.91	.27	.07	4.56	15.00	.01	17.49	.00	.00	.00		.00
6	69.41	.70	1.91	.34	.06	.49	1.89	.00	.56	.00	.00	.00		.00
7	13.58	.60	1.26	.09	.09	4.06	.85	.00	.44	1.07	.00	.00		.00
8	5.63	.56	4.42	.20	.09	.85	.24	.00	.34	.03	.00	.00		.00
9	2.07	.51	13.14	.19	.05	.37	.08	.00	19.65	.00	.00	.00		.00
10	1.40	.56	12.75	2.43	.05	.72	.03	.00	4.70	.00	.00	.00		.00
11	1.40	.46	11.52	380.22	.03	108.44	.04	.00	.09	.00	.01	.00		.00
12	1.40	.46	4.12	129.60	.04	7.36	.05	.00	.05	.00	.00	.00		.00
13	1.14	.46	1.60	14.66	.06	.54	.02	.00	.05	.00	.00	.00		.00
14	185.97	.29	.81	3.20	.05	.02	.03	.00	43.66	.00	.00	.08		.08
15	374.16	2.43	.81	1.66	.05	.01	.02	.00	.15	.00	.00	.16		.16
16	15.53	2.25	.54	1.12	.05	.01	.01	.00	.01	257.32	.00	.00		.00
17	4.29	.70	.27	.68	.02	.01	.00	.00	.00	3.57	.01	.00		.00
18	3.97	30.38	.27	.33	.02	.01	.00	.00	.00	.00	.00	.00		.00
19	3.97	12.81	.20	.25	.05	.01	.00	.00	.00	.00	.01	.00		.00
20	3.40	2.25	5.79	.23	.04	.01	.00	.00	.00	.00	.01	.00		.00
21	3.16	11.64	5.13	.16	.02	.01	.00	.00	.00	.00	.01	.01		.01
22	533.20	9.24	.40	.13	.03	.02	.00	.00	.00	.00	.00	.00		.00
23	354.54	1951.90	.18	.11	.03	.01	.00	.00	.00	.00	.00	.00		.00
24	78.12	67.09	.19	.13	.02	.02	31.79	.19	.00	.00	.00	.01		.01
25	157.18	294.92	.99	.14	.04	.93	154.14	16.60	.00	.00	.01	.01		.01
26	87.17	99.74	.33	.11	.03	.16	.18	3.02	.00	.00	.00	.00		.00
27	152.05	261.04	.04	.13	.01	.03	.03	.00	.00	.00	.01	.00		.00
28	62.11	83.23	.03	.12	.01	.02	.02	.00	.00	.00	.00	.00		.00
29	17.51	-----	.03	.07	1.54	.01	.01	.00	.00	.00	.00	.03		.03
30	8.54	-----	.92	.28	5.95	.02	.01	.00	.00	.00	.00	.02		.02
31	6.96	-----	149.06	-----	.60	-----	.01	.00	-----	.00	-----	.01		.01
MEAN	78.13	102.05	7.60	18.00	1.93	8.19	6.59	.64	7.77	8.45	.00	.01		.01
INCHES	2.88	3.39	.28	.64	.07	.29	.24	.02	.28	.31	.00	.00		.00

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0011901. QUALITY OF RECORDS: GOOD.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-32				62.1
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4-6, 1962											
9-4	1 1/2 / .01	.0000	9-4	RG	26		9-4	1740	.00	.0000	
				1616	.00	.00		1800	.37	.0000	
				1625	.47	.07		1816	15.00	.0001	
				1630	2.64	.29		1836	13.48	.0003	
				1640	.12	.31		1846	345.00	.0018	
				1710	.06	.34					
				1716	1.60	.50		1904	1004.00	.0118	
				1725	.67	.60		1924	1100.00	.0292	
				1735	.12	.62		1932	1994.00	.0394	
				1745	1.26	.83		1938	2120.00	.0496	
				1750	2.04	1.00		1946	1958.00	.0631	
				1800	1.14	1.19		2000	1598.00	.0837	
				1808	2.02	1.46		2016	1211.59	.1022	
				1815	1.63	1.65		2046	662.91	.1255	
				1825	.24	1.69		2128	350.00	.1431	
				1933	.01	1.70		2148	325.00	.1486	
				RG	3			2214	264.63	.1550	
				9-4	1602	.00		2232	257.00	.1589	
				1957	1.66			2248	242.98	.1622	
				9-4	RG	10		2304	223.13	.1652	
				1651	.00			2332	179.43	.1699	
				2007	RG	12	9-5	2400	155.58	.1738	
				1619	.00			0102	101.47	.1804	
				2000	.66			0200	80.40	.1847	
				RG	21			0300	51.51	.1880	
				1652	.00			0446	25.06	.1913	
				2003	1.27			0730	5.76	.1934	
				10 RG	AVG 1 2/3 / 4 /			0902	3.03	.1938	
				1600	.00			1158	1.47	.1941	
				1615	.04	.01		1800	.60	.1944	
				1630	.40	.11	9-6	2400	5 / .51	.1952	
				1645	.16	.15					
				1700	.36	.24					
				1715	.40	.34					
				1730	.72	.52					
				1745	1.12	.80					
				1800	1.24	1.11					
				1815	.36	1.20					
				1830	1.84	1.66					
				1845	.04	1.67					
				1900	.02	1.67					
				1915	.02	1.68					
				1930	.02	1.68					
				1945	.04	1.69					
				2000	.04	1.70					

Watershed conditions: 23% of area in mature cotton and corn, fair cover; 14% in pasture, and 49% idle, fair to good cover; 12% in woods, good cover; 2% in bare gullies.

NOTES: TO CONVERT RUNOFF IN GFS TO IN/HR, MULTIPLY BY 0.0000496. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.10-5. 1/ RAIN GAGES 3, 10-14, 20, 21, 24, AND 26 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1156 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 3/ RAINFALL FOR GAGE 11 IS LISTED ON P. 62.12-3; GAGES 13, 14, 20, AND 24 ON P. 62.3-3. 4/ ISOHYETAL MAP ON P. 62.11-5. 5/ RUNOFF DECREASED TO .32 GFS AT 2400, 9-8-62, THE BEGINNING OF NEXT EVENT.



MONTHLY PRECIPITATION AND RUNOFF (inches)							OXFORD, MISSISSIPPI				WATERSHED W-341/				62.11	
							AREA—75,000 ACRES (117.2 SQ. MILES)									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ₂ /	6.06	7.07	2.71	3.45	2.14	5.56	4.96	2.66	4.10	2.86	1.79	1.58	44.94		
	Q ₃ /	3.33	3.61	.76	.93	.45	.66	.58	.40	.43	.50	.35	.40	12.40		
	STA AV ₄ /P	4.36	5.22	4.39	4.61	3.86	4.44	4.18	3.10	4.76	2.49	4.72	4.72	50.85		
(57-62)	Q	1.72	2.10	1.57	1.32	.99	.59	.60	.43	.84	.41	1.08	1.41	13.06		
MEAN	P ₅ /	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		
43	YR															
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.14	2-23	.14	2-23	.27	2-23	.78	2-23	1.35	2-23	1.88	2-23	1.96	2-23	3.04
MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO	2-23	.14	2-23	.14	2-23	.27	2-23	.78	2-23	1.35	2-23	1.88	1-30	2.18	1-28	3.28
19 62	1962		1962		1962		1962		1962		1962		1957		1957	
NOTES: Quality of records: P, good; Q, good except for out-of-bank flow. Watershed conditions: About 22% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 55% in pasture and idle land, good cover April to October with fair cover remainder of year; 21% in woods; 2% in bare gullies. 1/ About 15% of area, principally in upper reaches, above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 31 rain gages. 3/ Monthly values of runoff include relatively insignificant flow through auxiliary station 34-A. 4/ Precipitation and runoff records began Jan. 1957. 5/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material:																
Type	Per- cent of area	Topsoil			Subsoil			Substratum			Internal drainage					
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability								
Ruston fine sandy loam to sandy clay loam	50	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid							
Collins silt loam	20	0-8	Weak fine granular	Moderately rapid	-----	-----	6	Moderately rapid	Rapid							
Providence silt loam and silty clay loam	13	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow							
Loring silt loam to silty clay loam	9	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
Grenada silt loam	8	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid							
GEOLOGY: About 52% of the surface area of the watershed is occupied by the Kosciusko formation, 26% by the Tallahatta formation, 1% by the Citronelle gravel, and 21% is valley alluvial material. The entire watershed is underlain by the Meridian formation, an extensive water saturated strata. All of these formations except the Citronelle gravel are of the Claiborne group of Eocene age. Their texture is predominantly sands with local clay lenses. The Kosciusko formation outcrops at the higher elevations along the watershed boundaries and ranges in depth to 120 feet. The Tallahatta formation outcrops at the lower elevations throughout the central portion of the watershed and ranges in depth from 120 to 150 feet. The underlying Meridian formation ranges in thickness from about 180 to 200 feet. Loess material and surface soil cover range in depth from 0 to 15 feet. The alluvial valleys are relatively wide and flat. The Meridian formation is the principal source of ground water in the area although perched water bodies occur in the Kosciusko and Tallahatta formations. The Meridian formation is the source of the relatively constant base flow along the lower reaches of the major stream channel. A normal westerly dip of the stratigraphic units of about 8 to 10 feet per mile has been altered by faulting south of the watershed to a greater southerly-southeasterly dip in the southern one-third of the watershed (Sub-watersheds W-28, W-4, W-5, W-10, and W-32). The normal piezometric gradient of about the same slope has been similarly altered. Springs south of the watershed indicate appreciable ground water outflow to the south. Normally, this water would flow westerly through the Meridian formation. Stratigraphic column of the major formations observed in Pigeon Roost Creek Watershed:																
Era	System	Series	Group	Formation	Description											
Cenozoic	Quaternary	Pleistocene and Recent		Alluvium	Cravels, sand, silt, and clay.											
				Loess	Silt and clay; massive; gray to brown.											
				Citronelle	Cravel, sand, and clay; irregular bedding and interfingering; cobbles 3 to 4 inches in diameter.											
	Tertiary	Eocene	Claiborne	Kosciusko	Sand, sandstone; white, brown to dark red; massive; high silt and clay content evenly disseminated; local clay lenses.											
				Tallahatta	Sand, clay shale, sandstone, silty limonite; silt and clay-white, gray to black lignitic; sand-fine, micaceous, white to brown, iron stained; iron concretions; abundant clay lenses.											
				Meridian	Sand, white to brown, limonite stained; micaceous; cross-bedded; local clay lenses white to brown.											
Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, vol. 5, No. 1, September 1963. See geologic map on page 62.11-4.																

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-34	62.11
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.18	.53	.00	.00	.01	.40	.00	.00		
2	.00	.00	.00	.00	.00	.68	.30	.00	.01	.00	.00	.00		
3	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.04	.00		
4	.00	.00	.00	.00	.00	.78	.00	.00	1.41	.00	.00	.00		
5	1.12	.19	.00	.13	.00	.00	.70	.00	.00	.00	.00	.06		
6	.03	.00	.00	.10	.00	.00	.42	.00	.00	.00	.00	.00		
7	.00	.00	.00	.00	.00	.22	.00	.00	.00	.69	.00	.00		
8	.00	.05	.48	.19	.00	.10	.00	.00	.30	.00	.21	.00		
9	.16	.00	.02	.00	.00	.00	.00	.00	.78	.00	.00	.00		
10	.00	.00	.29	.74	.00	.35	.00	.00	.00	.00	.00	.00		
11	.00	.00	.01	.99	.00	.41	.45	.00	.00	.00	.38	.00		
12	.00	.00	.00	.09	.00	.06	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00		
14	1.10	.00	.00	.00	.00	.00	.00	.00	.56	.07	.00	.00		
15	.07	.54	.00	.00	.00	.00	.00	.00	.23	.03	.00	.00		
16	.00	.00	.00	.00	.06	.00	.01	.00	.06	1.17	.00	.02		
17	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.49	.03		
18	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00		
19	.06	.00	.00	.00	.00	.15	.00	.00	.00	.00	.15	.00		
20	.05	.05	.49	.00	.00	.00	.00	.00	.00	.42	.00	.01		
21	.09	.35	.00	.00	.00	.06	.00	.00	.00	.08	.14	.53		
22	1.98	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
23	.14	3.38	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00		
24	.12	.00	.00	.00	.00	.69	1.15	.75	.01	.00	.00	.48		
25	.46	.96	.32	.00	.00	.61	1.65	1.09	.17	.00	.32	.00		
26	.46	.64	.00	.00	.00	.18	.00	.00	.40	.00	.00	.02		
27	.22	.40	.00	.28	.00	.00	.00	.00	.00	.00	.00	.00		
28	.00	.00	.00	.05	.00	.00	.05	.00	.00	.00	.00	.28		
29	.00	-----	.00	.00	.44	.14	.00	.00	.00	.00	.00	.15		
30	.00	-----	.94	.87	1.46	.00	.00	.23	.00	.00	.00	.00		
31	.00	-----	.16	-----	.00	-----	.23	.04	-----	.00	-----	.00		
TOTAL	6.06	7.07	2.71	3.45	2.14	5.56	4.96	2.66	4.10	2.86	1.79	1.58		
STA AV	4.36	5.22	4.39	4.61	3.86	4.44	4.18	3.10	4.76	2.49	4.72	4.72		

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM GAGES 1-31. STA AV FOR 6-YR 1957-62.

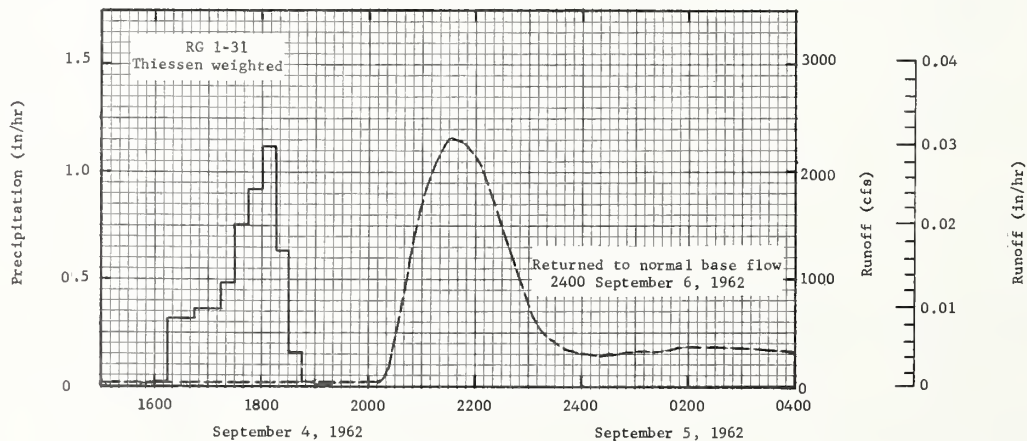
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-34	62.11
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	382.24	67.14	94.87	71.58	181.43	73.40	36.95	44.06	30.15	37.22	25.51	37.94		
2	118.10	63.47	82.83	55.88	54.14	87.92	52.74	42.99	30.14	43.71	27.83	38.44		
3	86.25	61.72	80.82	50.82	45.26	235.79	43.64	42.48	30.61	38.43	28.70	38.44		
4	67.99	60.09	80.56	48.57	44.13	299.23	35.46	37.96	225.37	36.45	27.79	38.44		
5	872.91	60.07	78.86	49.70	44.12	94.92	86.97	34.51	128.29	35.96	27.34	37.95		
6	391.72	63.92	76.57	50.94	43.58	51.83	68.07	33.55	39.14	36.45	27.34	36.47		
7	133.56	56.84	72.30	50.87	43.56	90.46	70.86	31.58	30.63	46.63	28.74	37.46		
8	92.11	48.61	82.54	50.86	43.55	53.60	29.67	33.02	27.83	44.43	31.61	38.44		
9	72.58	48.07	114.38	47.61	41.99	48.95	29.20	34.98	43.94	37.93	31.61	38.94		
10	71.80	45.81	109.53	52.17	41.47	46.75	31.63	33.54	59.77	34.99	30.63	43.61		
11	73.21	43.70	115.99	1049.11	41.46	185.36	33.56	33.54	41.50	34.51	32.10	43.11		
12	71.80	43.18	73.18	472.28	40.44	109.62	31.10	34.98	37.91	35.47	33.58	39.44		
13	67.18	42.68	51.53	97.02	39.93	35.03	29.64	35.46	37.91	34.99	35.02	39.44		
14	233.27	40.09	47.55	66.04	39.93	33.58	28.24	34.50	70.30	34.99	35.98	38.44		
15	1615.81	56.06	43.81	57.35	38.93	33.09	25.92	34.02	42.03	34.03	37.96	38.44		
16	132.22	81.00	39.60	51.87	38.43	33.09	26.36	31.58	37.46	430.26	39.94	38.44		
17	104.49	59.10	39.08	50.17	38.94	33.08	29.17	30.12	33.05	83.96	41.48	38.94		
18	96.14	111.21	38.09	50.16	37.94	33.08	30.12	30.12	29.67	50.63	43.55	40.45		
19	88.96	106.44	37.60	49.04	37.44	34.05	30.61	29.63	29.18	40.46	45.13	40.45		
20	81.06	54.78	54.80	46.27	37.93	34.05	30.61	31.09	30.13	37.44	46.74	41.48		
21	74.01	95.14	96.04	44.65	37.92	35.01	30.61	31.10	29.65	35.98	45.15	43.54		
22	1137.03	88.65	48.75	43.08	37.93	34.53	31.10	29.64	29.17	33.56	44.07	43.54		
23	2507.49	285.86	39.59	41.53	37.93	33.09	32.56	30.62	31.12	33.08	44.59	41.48		
24	216.08	462.92	38.54	41.02	38.42	34.58	59.44	33.55	33.08	34.53	40.96	41.48		
25	390.53	1277.80	46.34	41.02	38.42	81.19	619.13	144.44	33.08	33.55	44.07	43.02		
26	277.89	420.75	46.67	40.00	37.92	51.19	54.06	77.92	33.56	33.55	43.55	44.06		
27	542.50	1145.51	42.64	39.43	37.43	47.64	46.22	34.52	35.00	34.52	42.50	44.05		
28	220.88	373.80	44.14	40.00	36.45	38.61	45.12	31.12	34.52	34.04	40.98	43.54		
29	104.45	-----	43.09	39.48	40.54	44.17	43.52	59.01	32.59	32.57	39.44	41.48		
30	84.84	-----	49.14	42.66	62.12	36.47	41.45	60.48	32.10	31.11	38.94	40.76		
31	74.13	-----	492.02	-----	34.33	-----	43.04	32.58	-----	27.81	-----	41.47		
MEAN	338.17	405.88	77.46	97.71	45.61	69.44	58.93	40.60	45.30	50.75	36.85	40.41		
INCHES	3.33	3.61	.76	.93	.45	.66	.58	.40	.43	.50	.35	.40		

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.00031736. QUALITY OF RECORDS: GOOD. DAILY DISCHARGE VALUES INCLUDE RELATIVELY INSIGNIFICANT FLOW THROUGH AUXILIARY STATION 34-A.

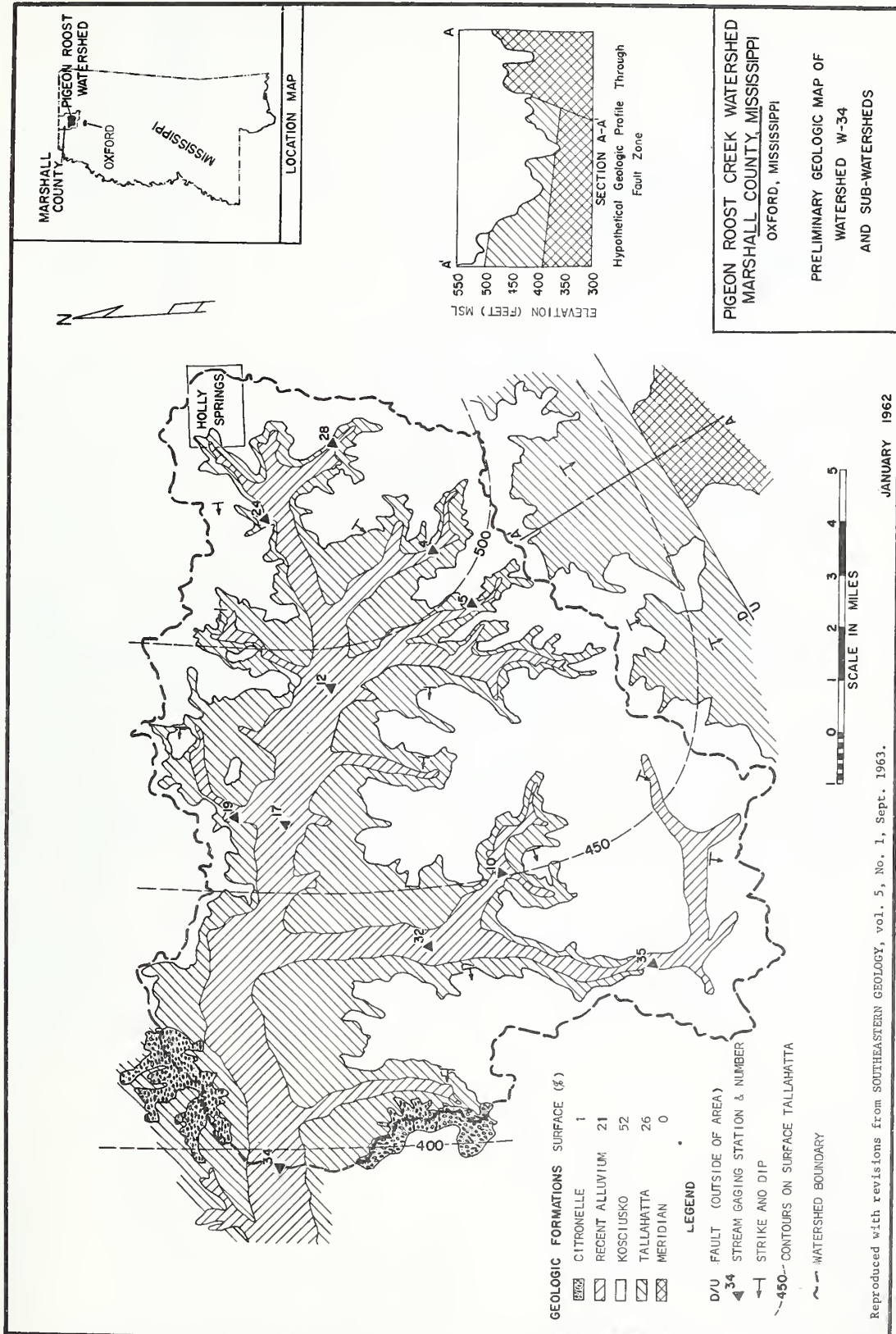
1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-34				62.11
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4-6, 1962 4/											
9-4	1/2/ .03	3/ .0086	9-4	RG	14		9-4	1918	36.89	.0000	
				1617	.00	.00		1944	40.89	.0002	
				1627	1.86	.31		2014	41.92	.0004	
				1633	.50	.36		2032	575.13	.0017	
				1724	.04	.39		2052	1451.00	.0061	
				1734	.96	.55					
				1742	3.45	1.01		2104	1858.00	.0105	
				1756	2.19	1.52		2114	2058.00	.0148	
				1810	1.54	1.88		2132	2316.26	.0235	
				1819	.33	1.93		2146	2281.59	.0306	
				1833	.04	1.94		2204	2098.00	.0393	
				1946	.02	1.96		2224	1617.52	.0475	
				RG	1			2300	788.00	.0571	
			9-4	1623		.00		2318	475.00	.0596	
				1847		.24		2332	382.40	.0609	
				RG	16			2346	328.77	.0620	
			9-4	1616		.00	9-5	2400	302.12	.0630	
				1836		.85		0020	286.88	.0643	
			9-4	RG	23			0104	315.09	.0672	
				1711		.00		0134	339.08	.0694	
			9-4	1840		.79		0154	361.08	.0709	
				RG	27			0244	355.52	.0749	
			9-4	1612		.00		0324	344.52	.0780	
				1832		.86		0404	309.87	.0809	
			9-4	31 RG	AVG 1/5/			0504	236.87	.0845	
				1545	.00	.00		0604	179.91	.0872	
				1600	.01	.00		0704	143.00	.0894	
				1615	.02	.01		0904	103.50	.0926	
				1630	.32	.09		1054	72.81	.0948	
				1645	.32	.17		1318	55.00	.0968	
				1700	.36	.26		1506	50.55	.0981	
				1715	.36	.35		1858	48.32	.1006	
				1730	.48	.47		2400	46.13	.1038	
				1745	.76	.66	9-6	2400	6/ 32.05	.1162	
				1800	.92	.89					
				1815	1.12	1.17					
				1830	.64	1.33					
				1845	.16	1.37					
				1900	.02	1.37					

Watershed conditions: 22% of area in mature cotton and corn, fair cover; 13% in pasture and 42% idle, fair to good cover; 21% in woods, good cover; 2% in bare gullies.

NOTES: TO CONVERT RUNOFF IN GFS TO IN/HR, MULTIPLY BY 0.00001322. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.11-4. 1/ RAIN GAGES 1-31 THIESSEN WEIGHTED. 2/ RAINFALL PRIOR TO 1220 ON 9-4-62. 3/ RUNOFF PRIOR TO 1918 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. 4/ ISOHYETAL MAP ON P. 62.11-5. 5/ RAINFALL FOR GAGE 2 IS LISTED ON P. 62.6-3; GAGES 3, 10, 12, 21, AND 26 ON P. 62.10-3; GAGES 4, 5, 9, 25, 29, AND 31 ON P. 62.4-3; GAGE 6 ON P. 62.8-3; GAGES 7 AND 18 ON P. 62.1-3; GAGES 8 AND 19 ON P. 62.2-3; GAGE 11 ON P. 62.12-3; GAGES 13, 20, AND 24 ON P. 62.3-3; GAGES 15, 17, AND 22 ON P. 62.5-3; GAGE 28 ON P. 62.17-2; AND GAGE 30 ON P. 62.7-3. 6/ NORMAL BASE FLOW.



OXFORD, MISSISSIPPI WATERSHED W-34





MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI AREA—7,550 ACRES (11.8 SQ. MILES)				WATERSHED W-35 ¹ / ₁ 62.12						
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	p2/	5.85	7.11	2.88	3.86	2.11	6.19	4.40	2.00	5.72	2.65	2.01	1.66	46.44		
	Q	3.43	4.23	.33	.69	.09	.36	.25	.00	.30	.01	.00	.00	9.69		
	STA AV ³ / _P	4.31	5.34	4.52	4.83	4.20	4.18	3.90	2.42	5.19	2.40	4.90	4.74	50.93		
(57-62)	Q	1.86	2.14	1.40	1.30	.74	.23	.13	.03	.46	.06	.81	1.24	10.40		
MEAN	p4/															
43	YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.74	2-23	.73	2-23	1.37	2-23	2.19	2-23	2.43	2-23	2.69	2-23	2.76	2-21	4.20
MAXIMUMS FOR PERIOD OF RECORD																
19 57 to 19 62	2-23 1962	.74	2-23 1962	.73	2-23 1962	1.37	2-23 1962	2.19	2-23 1962	2.43	2-23 1962	2.69	1-30 1957	3.46	1-27 1957	4.46
NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 20% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 72% in pasture and idle land, good cover April to October with fair cover remainder of year; 6% in woods; 2% in bare gullies. 1/ About 8% of area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 5 rain gages. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material, soils derived from Coastal Plains material and alluvial soils of mixed Loess and Coastal Plains material.																
Type		Per- cent of area	Topsoil			Subsoil			Substratum			Internal drainage				
			Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability							
Ruston fine sandy loam to sandy clay loam		47	0-4	Weak fine crumb	Moderately rapid	Weak to moderate fine subangular blocky		Rapid	54	Moderately rapid	Rapid					
Collins silt loam		17	0-8	Weak fine granular	Moderately rapid	-----		-----	6	Moderately rapid	Rapid					
Grenada silt loam		15	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky		Moderate	36	Moderate	Medium to rapid					
Providence silt loam and silty clay loam		12	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky		Slow	36	Moderate	Medium to slow					
Loring silt loam to silty clay loam		9	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky		Moderate	36	Moderate	Medium to rapid					
GEOLOGY: About 87% of the surface area is occupied by the Kosciusko formation and 13% is valley alluvial material. The dip of the stratigraphic units and the slope of the ground-water piezometric surface have changed from a normal westerly direction to the south by a fault along the southern boundary of the watershed. There is no base flow at the gaging station. The ground-water table is several feet below the stream bed at the gaging station. A more detailed description of the geologic formations and ground-water conditions in the area is given under Watershed W-34, page 62.11-1. Sources of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954, and A Report of Geological and Ground Water Investigations in Pigeon Roost Creek Watershed, Marshall County, Mississippi, Southeastern Geology, vol. 5, No. 1, 1963. See geologic map on page 62.11-4.																

1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI				WATERSHED W-35				62.12
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.16	.39	.00	.00	.02	.50	.00	.00	.00	
2	.00	.00	.00	.00	.00	1.04	.27	.28	.02	.00	.00	.00	.00	
3	.00	.00	.00	.00	.00	.00	.99	.00	.00	.00	.04	.00	.00	
4	.00	.00	.00	.00	.00	.42	.00	.00	1.66	.00	.00	.00	.00	
5	.94	.22	.00	.10	.00	.00	.47	.00	.00	.00	.00	.00	.05	
6	.04	.00	.00	.12	.00	.02	.05	.00	.00	.00	.00	.00	.00	
7	.00	.00	.00	.00	.00	.04	.00	.00	.00	.81	.00	.00	.00	
8	.00	.06	.57	.24	.00	.19	.00	.00	.64	.00	.21	.00	.00	
9	.15	.00	.03	.00	.00	.00	.00	.00	1.24	.00	.00	.00	.00	
10	.00	.00	.29	.38	.00	.12	.00	.00	.00	.00	.00	.00	.00	
11	.00	.00	.03	1.44	.00	1.02	.37	.00	.00	.00	.61	.00	.00	
12	.00	.00	.00	.09	.00	.03	.00	.00	.00	.00	.00	.00	.00	
13	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	
14	1.08	.00	.00	.00	.00	.00	.00	.00	1.15	.00	.00	.00	.00	
15	.06	.56	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	
16	.00	.00	.00	.00	.11	.00	.00	.00	.29	.71	.00	.01	.00	
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.48	.02	.00	
18	.00	.54	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	
19	.05	.00	.00	.00	.00	.10	.00	.00	.00	.00	.14	.00	.00	
20	.04	.06	.42	.00	.00	.00	.00	.00	.00	.46	.00	.00	.00	
21	.16	.26	.00	.00	.00	.17	.00	.00	.00	.17	.11	.58	.00	
22	1.76	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
23	.21	3.01	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	
24	.12	.00	.00	.00	.00	.80	1.53	.55	.00	.00	.00	.52	.00	
25	.50	1.01	.38	.00	.00	.67	1.53	.72	.11	.00	.37	.00	.00	
26	.49	.90	.00	.00	.00	.18	.00	.00	.42	.00	.00	.02	.00	
27	.25	.47	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00	.00	
28	.00	.00	.00	.11	.00	.00	.16	.00	.00	.00	.00	.28	.00	
29	.00	-----	.00	.00	.39	.01	.00	.00	.00	.00	.00	.18	.00	
30	.00	-----	.99	1.06	1.45	.00	.00	.35	.00	.00	.00	.00	.00	
31	.00	-----	.17	-----	.02	-----	.02	-----	.00	-----	-----	.00	.00	
TOTAL	5.85	7.11	2.88	3.86	2.11	6.19	4.40	2.00	5.75	2.65	2.01	1.66		
STA AV	4.31	5.34	4.52	4.83	4.20	4.18	3.90	2.42	5.20	2.40	4.90	4.74		

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 10, 11, 20, 21, AND 24. STA AV FOR 6-YR 1957-62.

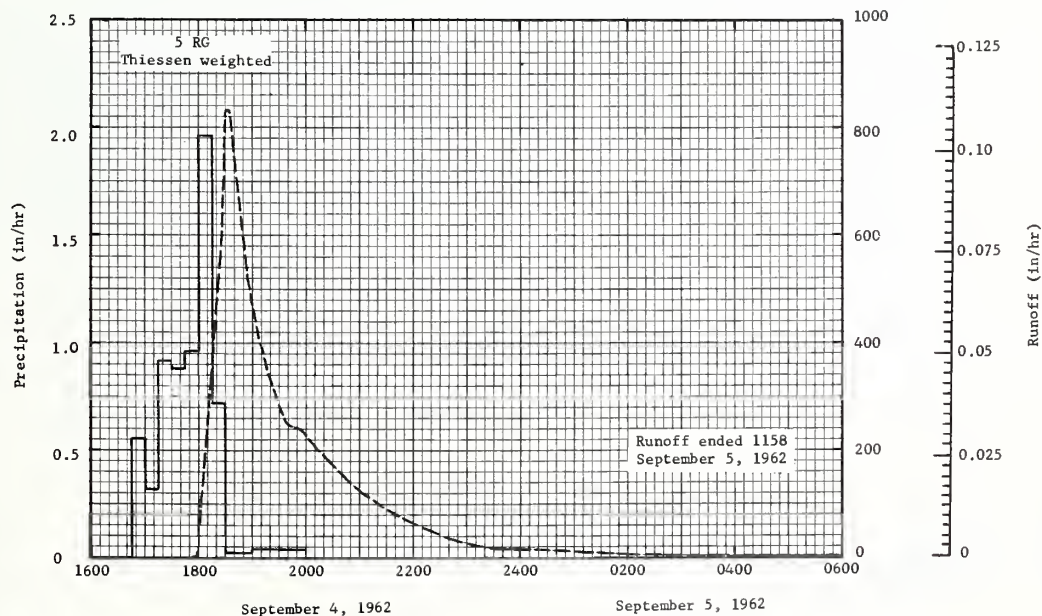
1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI				WATERSHED W-35				62.12
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	38.76	.01	2.27	1.04	28.19	.00	.00	.00	.00	.00	.00	.00	.00	
2	9.23	.01	.31	.00	.00	24.90	.14	.00	.00	.00	.00	.00	.00	
3	2.20	.00	.04	.00	.00	29.73	.00	.00	.00	.00	.00	.00	.00	
4	.31	.01	.03	.00	.00	16.85	.00	.00	48.16	.00	.00	.00	.00	
5	85.09	.01	.03	.00	.00	.13	.00	.00	1.24	.00	.00	.00	.00	
6	33.07	.01	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
7	10.56	.01	.00	.00	.00	.00	.00	.00	.00	2.57	.00	.00	.00	
8	3.34	.01	3.33	.00	.00	.00	.00	.00	.30	.03	.00	.00	.00	
9	.06	.00	8.95	.00	.00	.00	.00	.00	16.27	.00	.00	.00	.00	
10	.00	.00	9.06	.00	.00	.00	.00	.00	.41	.00	.00	.00	.00	
11	.00	.01	5.05	155.09	.00	36.85	.00	.00	.00	.00	.00	.00	.00	
12	.01	.01	.80	60.36	.00	4.99	.00	.00	.00	.00	.00	.00	.00	
13	.00	.00	.00	2.83	.00	.04	.00	.00	.00	.00	.00	.00	.00	
14	91.84	.00	.00	.06	.00	.01	.00	.00	29.36	.00	.00	.00	.00	
15	142.24	.34	.00	.00	.00	.01	.00	.00	.13	.00	.00	.00	.00	
16	13.17	.49	.00	.00	.00	.00	.00	.00	.46	.34	.00	.00	.00	
17	5.65	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	
18	2.85	6.68	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
19	.67	3.66	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
20	.05	.14	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
21	.00	2.86	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
22	288.42	2.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
23	147.64	843.67	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
24	21.70	29.74	.00	.00	.00	.00	14.93	.00	.00	.00	.00	.00	.00	
25	82.69	178.00	.00	.00	.00	1.65	62.92	.82	.00	.00	.00	.00	.00	
26	39.76	97.37	.00	.00	.00	.00	1.22	.34	.00	.00	.00	.00	.00	
27	53.42	139.94	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
28	12.52	38.65	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
29	2.89	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
30	.93	-----	.00	.53	.05	.00	.00	.00	.00	.00	.00	.00	.00	
31	.03	-----	73.09	-----	.00	-----	.00	.00	-----	.00	-----	.00	.00	
MEAN	35.13	47.98	3.36	7.33	.91	3.84	2.55	.04	3.21	.10	.00	.00	.00	
INCHES	3.43	4.23	.33	.69	.09	.36	.25	.00	.30	.01	.00	.00	.00	

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0031526. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-35				62.12
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of September 4-5, 1962											
9-4	.00	.0000	9-4	RG	11		9-4	1752	.00	.0000	
				1655	.00	.00		1758	.05	.0000	
				1717	.08	.03		1826	585.00	.0179	
				1735	.77	.26		1832	836.76	.0272	
				1741	2.90	.55		1854	519.64	.0599	
				1755	1.67	.94					
				1759	1.20	1.02		1918	340.00	.0825	
				1810	4.58	1.86		1938	253.60	.0955	
				1816	1.30	1.99		1954	240.36	.1041	
				1825	.07	2.00		2032	168.22	.1211	
				1908	.01	2.01		2138	83.32	.1393	
			9-4	1936	.06	2.04	9-5	2238	38.60	.1473	
				2002	.02	2.05		2326	19.75	.1503	
				5 RG	AVG 1/2/3/			2400	18.19	.1518	
				1645	.00	.00		0232	1.97	.1551	
				1700	.56	.14		0554	.18	.1556	
				1715	.32	.22		0732	.10	.1556	
				1730	.92	.45		1158	.00	.1556	
				1745	.88	.67					
				1800	.96	.91					
				1815	1.96	1.40					
				1830	.72	1.58					
				1845	.02	1.58					
				1900	.02	1.59					
				1915	.04	1.60					
				1930	.04	1.61					
				1945	.04	1.62					
				2000	.04	1.63					

Watershed conditions: 20% of area in mature cotton and corn, fair cover; 19% in pasture and 53% idle, fair to good cover; 6% in woods, good cover; 2% in bare gullies.

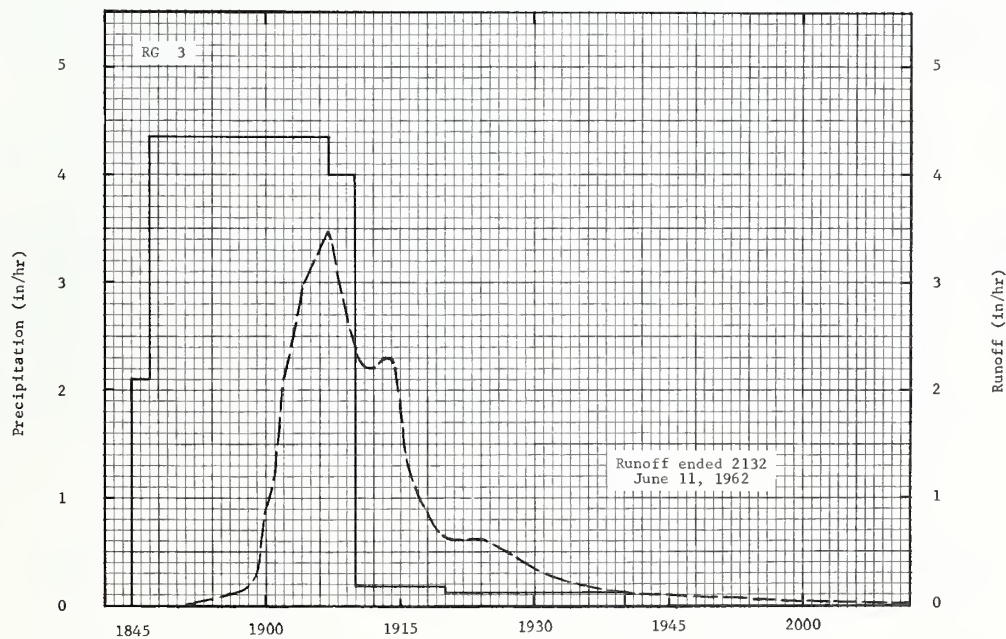
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0001314. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59. USDA MISC. PUB. 945, P. 62.12-5. 1/ RAIN GAGES 10, 11, 20, 21, AND 24 THIESSEN WEIGHTED. 2/ RAINFALL FOR GAGES 10 AND 21 IS LISTED ON P. 62.10-3, AND GAGES 20 AND 24 ON P. 62.3-3. 3/ ISOHYETAL MAP ON P. 62.11-5.



OXFORD, MISSISSIPPI WATERSHED W-35

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED WC-1			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
<p>Watershed conditions: 100% of area was in corn, 15" to 18" high. Relatively clean cultivated with about 4000 plants per acre. Last tillage operation was on May 17. Row direction ranges from approximate contour to up and down hill.</p>			<u>Event of June 11, 1962 - Continued</u>				6-11	1916	1.283	.672
								1918	.879	.708
								1920	.613	.733
								1924	.613	.774
								1928	.440	.809
								1930	.317	.821
								1935	.197	.843
								1946	.087	.869
								2002	.033	.885
								2017	.013	.890
								2033	.005	.893
								2046	.003	.894
								2132	.000	.895

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.912.



June 11, 1962

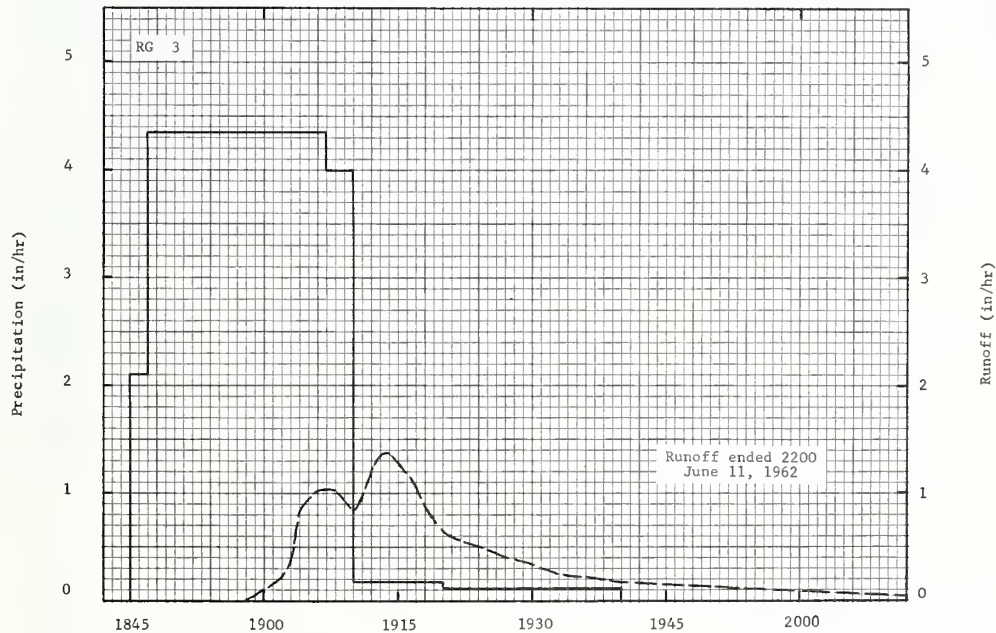
OXFORD, MISSISSIPPI WATERSHED WC-1

MONTHLY PRECIPITATION AND RUNOFF (inches) 1/							OXFORD, MISSISSIPPI WATERSHED WC-2 AREA—1.45 ACRES																																																								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL																																																	
1962	P	7.10	6.92	3.07	3.53	1.92	7.11	5.20	3.87	3.62	2.08	1.94	1.45	47.81																																																	
	Q	5.43	3.63	.51	1.03	.00	1.02	.94	.63	.28	.15	.02	.00	13.64																																																	
STA AV ² /P		3.77	4.80	4.85	4.00	4.24	4.86	4.38	4.33	3.53	2.55	3.94	4.61	49.86																																																	
	(58-62) Q	2.06	2.15	1.91	.51	.89	1.14	.58	.69	.57	.30	.76	1.49	13.05																																																	
MEAN P ³ /43 YR		5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31																																																	
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																																																															
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																																																												
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS																																																
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME																																															
1962	1-22	2.54	1-22	1.29	2-23	1.76	1-22	2.37	1-22	2.69	1-22	2.69	1-22	2.69	2-21	3.59																																															
MAXIMUMS FOR PERIOD OF RECORD																																																															
1958 to 1962	6-10 1961	4.81	1-22 1962	1.29	2-23 1962	1.76	1-22 1962	2.37	1-22 1962	2.69	1-22 1962	2.69	1-22 1962	2.69	12-9 1961	3.66																																															
NOTES: Quality of records: Monthly P and Q, good. Watershed conditions: 100% of area was cultivated in corn, average crop yields, fair winter cover provided by crop residue. 1/ Precipitation data obtained from rain gage 3. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean precipitation based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																																																															
SOILS: (Revision) Loess soils underlain by Coastal Plains material and soils derived from Coastal Plains material.																																																															
<table><tr><th rowspan="2">Type</th><th rowspan="2">Per- cent of area</th><th colspan="3">Topsoil</th><th colspan="2">Subsoil</th><th colspan="2">Substratum</th><th rowspan="2">Internal drainage</th></tr><tr><th>Avg. depth (in.)</th><th>Structure</th><th>Perme- ability</th><th>Structure</th><th>Perme- ability</th><th>Avg. depth to(in.)</th><th>Perme- ability</th></tr><tr><td>Providence silt loam and silty clay loam</td><td>44</td><td>0-5</td><td>Weak, fine to medium, granular</td><td>Moderate</td><td>Weak medium subangular blocky</td><td>Slow</td><td>36</td><td>Moderate</td><td>Medium to slow</td></tr><tr><td>Ruston sandy clay loam</td><td>41</td><td>0-4</td><td>Weak fine crumb</td><td>Moderately rapid</td><td>Weak to moderate, fine subangular blocky</td><td>Rapid</td><td>54</td><td>Moderately rapid</td><td>Rapid</td></tr><tr><td>Loring silt loam</td><td>15</td><td>0-6</td><td>Weak, fine to medium, granular</td><td>Moderate</td><td>Weak medium subangular blocky</td><td>Moderate</td><td>36</td><td>Moderate</td><td>Medium to rapid</td></tr></table>																	Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage	Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	Providence silt loam and silty clay loam	44	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow	Ruston sandy clay loam	41	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid	Loring silt loam	15	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid
Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage																																																						
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability																																																							
Providence silt loam and silty clay loam	44	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow																																																						
Ruston sandy clay loam	41	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid																																																						
Loring silt loam	15	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid																																																						
GEOLOGY: Outcrops of geological material do not occur within the watershed. The surface soil cover, which ranges in depth from about 4 to 6 feet, is underlain by the Kosciusko formation of the Claiborne group of Eocene age. The texture of this formation is predominately sands with local clay lenses. Regional structure dips slightly to the west. The hydrology of the immediate area is not materially affected by local subsurface structure or ground-water interfaces. Ground water occurs at depths in excess of 50 feet. Small local perched water bodies may occur within or immediately below the surface soil cover. Source of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954.																																																															
1962 SELECTED RUNOFF EVENT							OXFORD, MISSISSIPPI WATERSHED WC-2																																																								
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF																																																								
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)																																																					
Event of June 11, 1962																																																															
	RG 3			RG	3																																																										
5-16	.05	.000	6-11	1845	.00	.00	6-11	1858	.000	.000																																																					
5-29	.07	.000		1847	2.10	.07		1859	.068	.001																																																					
5-30	1.78	.000		1907	4.35	1.52		1902	.205	.007																																																					
6-1	.65	.000		1910	4.00	1.72		1903	.383	.012																																																					
6-2	.25	.000		1920	.18	1.75		1904	.848	.023																																																					
6-3	.38	.000		1940	.12	1.79		1906	1.026	.054																																																					
6-4	.75	.000						1908	1.026	.088																																																					
6-7	.04	.000						1910	.848	.119																																																					
6-8	.28	.000						1912	1.224	.154																																																					
6-10	.16	.000						1913	1.375	.175																																																					
6-11	4/.03	.000																																																													
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.462. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4.																																																															
4/ RAINFALL BETWEEN 1045 AND 1055 ON 6-11-62.																																																															

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1962			SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI				WATERSHED WC 2			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)				
<p>Watershed conditions: 100% of the area was in corn, 15" to 18" high. Relatively clean cultivated with about 12,000 plants per acre. Last tillage operation on May 29. Cultivated on the contour, 0.2 to 0.4% row slopes.</p>			<u>Event of June 11, 1962 - Continued</u>				6-11	1914	1.375	.198				
								1917	1.074	.260				
								1920	.636	.302				
								1926	.451	.357				
								1933	.260	.398				
								1952	.109	.457				
							2013	.034	.482					
							2032	.014	.489					
							2050	.007	.493					
							2200	.000	.496					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.462.



June 11, 1962

OXFORD, MISSISSIPPI WATERSHED WC-2

MONTHLY PRECIPITATION AND RUNOFF (inches) 1/							OXFORD, MISSISSIPPI AREA—1.61 ACRES							
MONTH YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P	7.10	6.92	3.07	3.53	1.92	7.11	5.20	3.87	3.62	2.08	1.94	1.45	47.81
	Q	4.72	3.90	.74	1.03	.00	1.79	2.00	1.56	.83	.25	.11	.02	16.95
STA AV ² /	P	3.77	4.80	4.85	4.00	4.24	4.86	4.38	4.33	3.53	2.55	3.94	4.61	49.86
(58-62)	Q	1.73	2.37	2.25	.56	.97	1.59	.94	1.30	.74	.56	1.15	1.70	15.86
MEAN P ³ / _{43 YR}		5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-11	3.49	1-22	1.31	2-23	1.70	1-22	2.26	1-22	2.59	1-22	2.59	1-22	2.59	2-21	3.77

MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1962	6-10 1961	5.96	6-10 1961	1.82	6-10 1961	1.85	1-22 1962	2.26	1-22 1962	2.59	1-22 1962	2.59	1-22 1962	2.59	12-9 1961	4.31

NOTES: Quality of records: Monthly P and Q, good. Watershed conditions: 100% of area was cultivated in corn, low crop yields, poor winter cover provided by crop residue. 1/ Precipitation data obtained from rain gage 3. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean precipitation based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

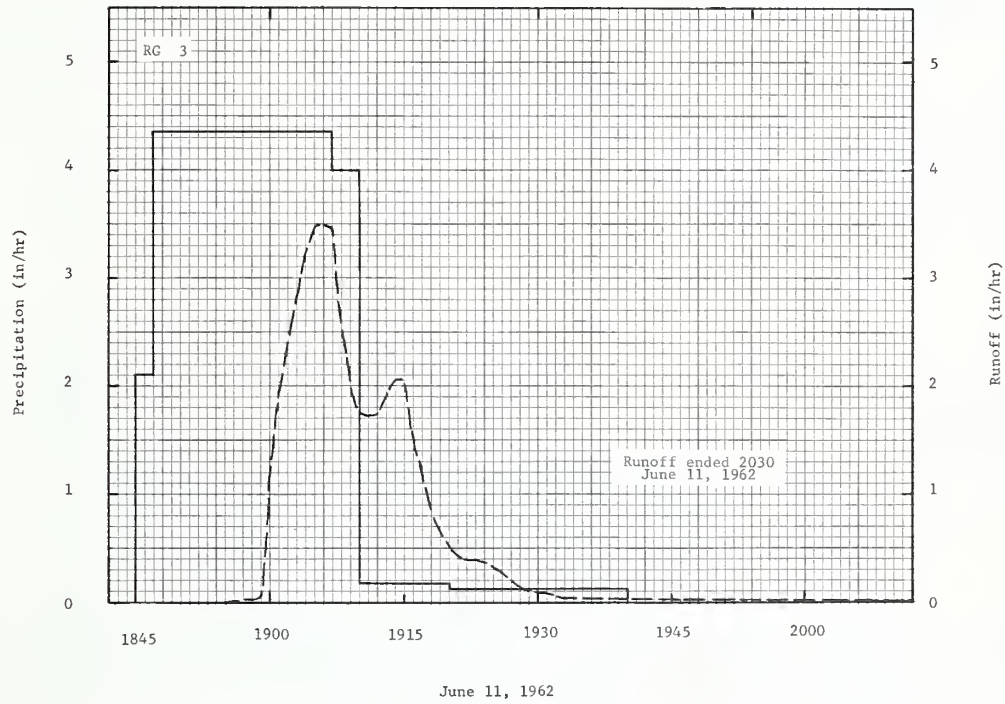
SOILS: (Revision) Loess soils underlain by Coastal Plains material: Providence silt loam and silty clay loam - 100%. Topsoil: depth - 0-6 in.; structure-weak,fine to medium, granular; permeability - moderate. Subsoil: structure - weak, medium, subangular blocky; permeability - slow. Substratum: average depth to - 36 in.; permeability - moderate; internal drainage - medium to slow.

GEOLOGY: Outcrops of geological material do not occur within the watershed. The surface soil cover, which ranges in depth from about 4 to 6 feet, is underlain by the Kosciusko formation of the Claiborne group of Eocene age. The texture of this formation is predominately sands with local clay lenses. Regional structure dips slightly to the west. The hydrology of the immediate area is not materially affected by local subsurface structure or ground-water interfaces. Ground water occurs at depths in excess of 50 feet. Small local perched water bodies may occur within or immediately below the surface soil cover. Source of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954.

1962 SELECTED RUNOFF EVENT						OXFORD, MISSISSIPPI		WATERSHED WC-3			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
	RG 3			RG	3						
5-16	.05	.000	6-11	1845	.00	.00	6-11	1855	.000	.000	
5-29	.07	.000		1847	2.10	.07		1856	.012	.000	
5-30	1.78	.000		1907	4.35	1.52		1858	.018	.001	
6-1	.65	.000		1910	4.00	1.72		1859	.345	.004	
6-2	.25	.000		1920	.18	1.75		1900	1.189	.016	
6-3	.38	.000						1901	1.953	.043	
6-4	.75	.017		1940	.12	1.79		1904	3.222	.172	
6-7	.04	.000						1905	3.487	.228	
6-8	.28	.000						1907	3.487	.344	
6-10	.16	.000						1908	2.587	.395	
6-11	4/.03	.000						1910	1.737	.467	
								1912	1.737	.525	
								1914	2.064	.588	
								1915	2.064	.622	
								1916	1.528	.652	
								1918	.844	.692	
								1921	.407	.723	
								1924	.376	.743	
								1928	.142	.760	
								1933	.031	.767	
								1941	.012	.770	
								1948	.006	.771	
								2030	.000	.773	

Watershed conditions: 100% of area was in corn, 15" to 18" high. Relatively clean cultivated with about 4000 plants per acre. Last tillage operation was on May 17. Row direction ranges from approximate contour to up and down hill.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.623. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4. 4/ RAINFALL BETWEEN 1045 AND 1055 ON 6-11-62.



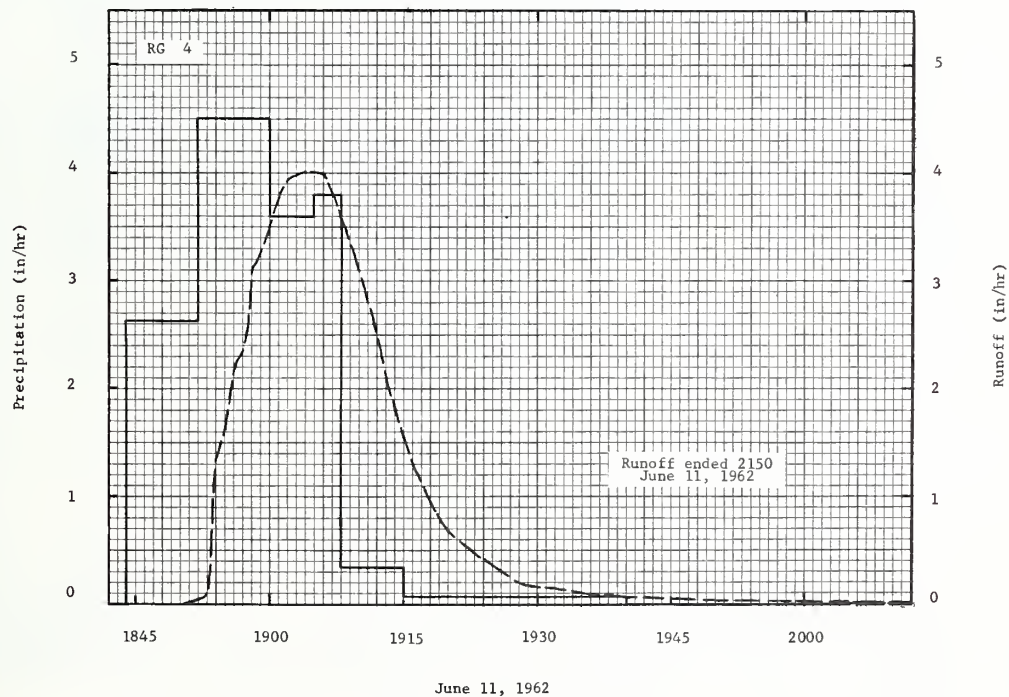
OXFORD, MISSISSIPPI WATERSHED WC-3

MONTHLY PRECIPITATION AND RUNOFF (inches) 1/							OXFORD, MISSISSIPPI WATERSHED WP-4 AREA—3.01 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P	7.20	6.81	3.04	3.51	1.89	6.96	5.14	3.57	3.40	2.09	1.97	1.43	47.01		
	Q	5.01	4.06	.94	1.38	.29	2.82	1.90	.89	.45	.20	.04	.01	17.99		
	STA AV ² /P	3.79	4.77	4.79	3.87	4.17	4.72	4.29	4.14	3.46	2.46	3.90	4.51	48.87		
(58-62)	Q	1.93	2.54	2.40	.87	1.24	2.04	.99	.93	.56	.60	1.00	1.33	16.43		
MEAN P ³ /43 YR		5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-11	4.02	1-22	1.49	2-23	1.90	1-22	2.45	1-22	2.79	1-22	2.79	1-22	2.79	2-21	3.93
MAXIMUMS FOR PERIOD OF RECORD																
19 58 to	6-10	5.30	6-10	1.97	6-10	1.97	1-22	2.45	1-22	2.79	1-22	2.79	1-22	2.79	2-21	3.93
19 62	1961		1961		1961		1962		1962		1962		1962		1962	
NOTES: Quality of records: Monthly P and Q, good. Watershed conditions: 100% of area in permanent pasture since 1956. Good to fair cover on 85% area, 15% (steeper slopes) has poor cover. Poor management - overgrazed, no fertilization. 1/ Precipitation data obtained from rain gage 4. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean precipitation based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
SOILS: (Revision) Loess soils underlain by Coastal Plains material and soils derived from Coastal Plains material.																
Type		Per- cent of area	Topsoil			Subsoil			Substratum		Internal drainage					
			Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability							
Providence silt loam and silty clay loam		45	0-5	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Slow	36	Moderate	Medium to slow						
Ruston fine sandy loam		38	0-4	Weak fine crumb	Moderately rapid	Weak to moderate, fine subangular blocky	Rapid	54	Moderately rapid	Rapid						
Crenada silt loam		17	0-6	Weak, fine to medium, granular	Moderate	Weak medium subangular blocky	Moderate	36	Moderate	Medium to rapid						
GEOLOGY: Outcrops of geological material do not occur within the watershed. The surface soil cover, which ranges in depth from about 4 to 6 feet, is underlain by the Kosciusko formation of the Claiborne group of Eocene age. The texture of this formation is predominately sands with local clay lenses. Regional structure dips slightly to the west. The hydrology of the immediate area is not materially affected by local subsurface structure or ground-water interfaces. Ground water occurs at depths in excess of 50 feet. Small local perched water bodies may occur within or immediately below the surface soil cover. Source of data: Marshall County Geology, Mississippi Geological Survey Bulletin 78, 1954.																
1962 SELECTED RUNOFF EVENT							OXFORD, MISSISSIPPI WATERSHED WP-4									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 11, 1962																
	RC 4			RC	4											
5-16	.05	.000	6-11	1844	.00	.00	6-11	1850	.000	.000						
5-29	.08	.000		1852	2.63	.35		1851	.201	.002						
5-30	1.74	.287		1900	4.50	.95		1852	.567	.008						
6-1	.68	.165		1905	3.60	1.25		1853	.900	.020						
6-2	.26	.000		1908	3.80	1.44		1854	1.354	.039						
6-3	.38	.042		1915	.34	1.48		1855	1.618	.064						
6-4	.73	.322		1940	.07	1.51		1856	2.201	.096						
6-7	.04	.000						1857	2.316	.133						
6-8	.37	.068						1858	3.097	.178						
6-10	.19	.000						1900	3.493	.288						
6-11	4/.04	.000														
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.035. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4. 4/ RAINFALL BETWEEN 1040 AND 1050 ON 6-11-62.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1962 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED WP-4			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Watershed conditions: 100% of area was in permanent pasture (common lespedeza and native grasses). About 85% of area had good cover, 15% poor cover.			Event of June 11, 1962 - Continued				6-11	1902	3.954	.412
								1904	4.020	.545
								1906	4.020	.679
								1908	3.592	.806
								1910	3.143	.918
								1912	2.554	1.013
								1914	1.865	1.087
								1916	1.321	1.140
								1918	.929	1.177
								1920	.689	1.204
								1924	.409	1.241
								1928	.201	1.261
								1936	.099	1.281
								1949	.033	1.295
								2005	.007	1.301
								2018	.003	1.302
								2150	.000	1.304

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.035.



OXFORD, MISSISSIPPI WATERSHED WP-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI AREA—3,200 ACRES (5.00 SQ. MILES)				WATERSHED W-17A 62.17						
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P ¹ / Q	6.62 3.48	6.81 4.12	2.64 .17	3.05 .29	2.12 .03	4.99 .01	5.44 .22	2.91 .07	2.84 .01	3.58 .38	1.66 .01	1.47 .02	44.13 8.81			
STA AV ² /P (58-62) Q	3.81	4.76	4.59	4.16	3.22	4.06	4.71	4.15	3.97	2.34	3.51	4.68	47.96			
(58-62) Q	1.03	1.56	1.11	.63	.31	.11	.18	.20	.59	.11	.09	.54	6.46			
MEAN P ³ / 43 YR	5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.42	2-23	.42	2-23	.84	2-23	2.20	2-23	3.18	2-23	3.33	2-23	3.34	2-23	4.15
MAXIMUMS FOR PERIOD OF RECORD ⁴ / ₁₉₆₂																
1962	2-23	.42	2-23	.42	2-23	.84	2-23	2.20	2-23	3.18	2-23	3.33	2-23	3.34	2-23	4.15
NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 16% of area in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 54% in pasture and idle land, good cover April to October with fair cover remainder of year; 28% in woods; 2% in bare gullies. 1/ Monthly precipitation Thiessen weighted from rain gages 2, 17, 22, and 28. 2/ Precipitation and runoff records began Jan. 1957, but monthly data for 1957 were excluded from the station averages because discharge values were estimated that year. 3/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss. 4/ Maximum discharges and volumes were not computed prior to 1961 - poor records 1957-60.																
SOILS: (Revision) Subsoil structure for Ruston fine sandy loam should read: <u>Weak to moderate, fine subangular blocky</u> (instead of weak, fine granular subangular blocky as previously described). Topsoil structure for Providence, Loring, and Grenada soils should read: <u>Weak, fine to medium, granular</u> .																
1962 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI				WATERSHED W-17A 62.17						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.19	.18	.00	.00	.00	.72	.00	.00				
2	.00	.00	.00	.00	.00	.55	.65	.26	.00	.00	.00	.00				
3	.00	.00	.00	.00	.00	.46	.00	.00	.00	.00	.04	.00				
4	.00	.00	.00	.00	.00	.72	.00	.00	.54	.00	.00	.00				
5	1.07	.09	.00	.12	.00	.00	.24	.00	.00	.00	.00	.05				
6	.02	.00	.00	.07	.00	.00	.78	.00	.00	.00	.00	.00				
7	.00	.00	.00	.00	.00	.23	.00	.00	.00	.73	.00	.00				
8	.00	.06	.41	.20	.00	.06	.00	.00	.16	.00	.21	.00				
9	.13	.00	.05	.00	.00	.00	.00	.00	.60	.00	.00	.00				
10	.00	.00	.30	.82	.00	.54	.00	.00	.00	.00	.00	.00				
11	.00	.00	.00	.57	.00	.08	.58	.00	.00	.00	.32	.00				
12	.00	.00	.00	.10	.00	.10	.00	.00	.00	.00	.00	.00				
13	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00				
14	1.14	.00	.00	.00	.00	.00	.00	.00	.68	.02	.00	.00				
15	.10	.50	.00	.00	.00	.00	.00	.00	.13	.08	.00	.00				
16	.00	.00	.00	.00	.01	.00	.01	.00	.00	1.64	.00	.01				
17	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.46	.02				
18	.00	.42	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00				
19	.06	.00	.00	.00	.00	.19	.00	.00	.00	.00	.17	.00				
20	.05	.02	.57	.00	.00	.00	.00	.00	.00	.33	.00	.01				
21	.04	.44	.00	.00	.00	.00	.00	.00	.00	.06	.14	.51				
22	2.58	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
23	.13	3.50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
24	.14	.00	.00	.00	.00	.58	.72	1.17	.06	.00	.00	.44				
25	.48	1.07	.24	.00	.00	.57	1.94	1.22	.20	.00	.28	.00				
26	.49	.33	.00	.00	.00	.72	.00	.00	.40	.00	.00	.04				
27	.19	.38	.00	.25	.00	.00	.00	.00	.00	.00	.00	.00				
28	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.26				
29	.00	-----	.00	.00	.45	.01	.00	.00	.00	.00	.00	.13				
30	.00	-----	.93	.88	1.47	.00	.00	.10	.00	.00	.00	.00				
31	.00	-----	.14	-----	.00	-----	.52	.16	-----	.00	-----	.00				
TOTAL	6.62	6.81	2.64	3.05	2.12	4.99	5.44	2.91	2.84	3.58	1.66	1.47				
STA AV	3.81	4.76	4.59	4.16	3.22	4.06	4.71	4.15	3.97	2.34	3.51	4.68				
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM GAGES 2, 17, 22, AND 28. STATION AVERAGE IS FOR 5-YR RECORD PERIOD 1958-62.																

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1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI WATERSHED W-17A 62-17						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	8.94	.21	6.73	.09	2.70	.04	.03	.04	.06	.05	.07	.11
2	4.21	.11	1.31	.10	.02	.04	.03	.05	.06	.03	.08	.10
3	1.15	.11	1.09	.09	.01	.02	.04	.05	.05	.05	.05	.10
4	.30	.11	.70	.09	.01	1.11	.04	.05	.08	.07	.03	.08
5	20.63	.08	.27	.10	.01	.05	.05	.04	.10	.07	.03	.07
6	7.00	.04	.35	.09	.01	.07	1.30	.05	.07	.05	.02	.09
7	2.14	.07	.35	.07	.01	.07	1.38	.05	.07	.09	.02	.10
8	.75	.11	1.47	.07	.01	.04	.02	.05	.09	.05	.04	.12
9	.19	.11	1.52	.07	.01	.03	.04	.05	.10	.06	.03	.13
10	.16	.09	1.44	9.00	.01	.03	.04	.05	.10	.07	.02	.13
11	.17	.10	.83	20.66	.00	.03	.03	.05	.09	.07	.05	.12
12	.16	.10	.28	7.48	.05	.03	.06	.05	.07	.06	.09	.11
13	.15	.09	.15	.35	.07	.03	.06	.04	.06	.05	.08	.11
14	46.86	.11	.13	.21	.03	.04	.02	.04	.05	.07	.06	.12
15	38.41	.29	.13	.12	.02	.04	.04	.04	.06	.07	.05	.11
16	1.78	.13	.13	.07	.03	.03	.03	.05	.09	49.73	.07	.11
17	.77	.12	.13	.07	.02	.03	.01	.04	.07	.34	.11	.13
18	.85	.48	.12	.14	.03	.03	.00	.03	.05	.03	.10	.13
19	.65	.26	.11	.14	.05	.02	.00	.04	.03	.04	.10	.13
20	.21	.14	1.15	.08	.04	.02	.00	.02	.06	.03	.10	.12
21	.16	.92	.23	.06	.04	.03	.00	.02	.06	.03	.10	.12
22	188.65	.14	.02	.05	.04	.04	.00	.03	.05	.03	.11	.12
23	70.77	447.48	.02	.06	.04	.04	.00	.03	.04	.03	.10	.11
24	17.51	.97	.01	.06	.04	.03	.00	.08	.04	.04	.08	.08
25	18.40	60.23	.01	.04	.04	.03	24.85	7.73	.02	.04	.09	.07
26	13.91	13.65	.02	.04	.05	.04	.09	.21	.03	.05	.09	.09
27	12.79	15.79	.02	.05	.05	.03	.06	.06	.05	.04	.07	.12
28	4.34	11.39	.02	.04	.04	.02	.05	.07	.05	.04	.07	.12
29	2.93	-----	.02	.04	.03	.03	.07	.07	.05	.05	.07	.11
30	1.73	-----	.09	.11	.03	.04	.07	.07	.04	.09	.10	.11
31	.89	-----	4.65	-----	.03	-----	.98	.06	-----	.08	-----	.11
MEAN	15.08	19.76	.75	1.32	.11	.07	.94	.30	.06	1.66	.06	.10
INCHES	3.48	4.12	.17	.29	.03	.01	.22	.07	.01	.38	.01	.02

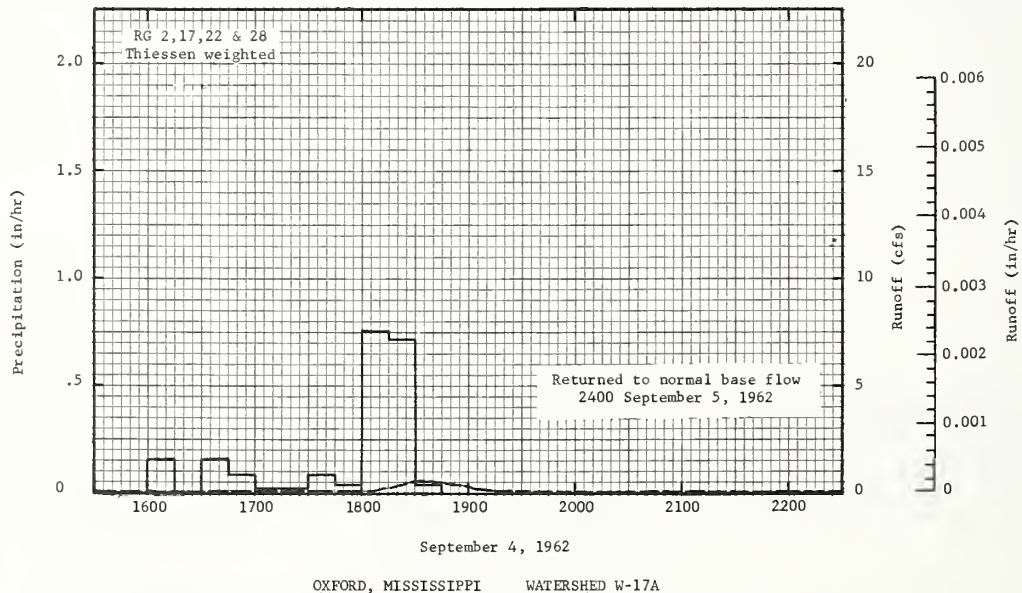
NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0074380. QUALITY OF RECORDS: FAIR.

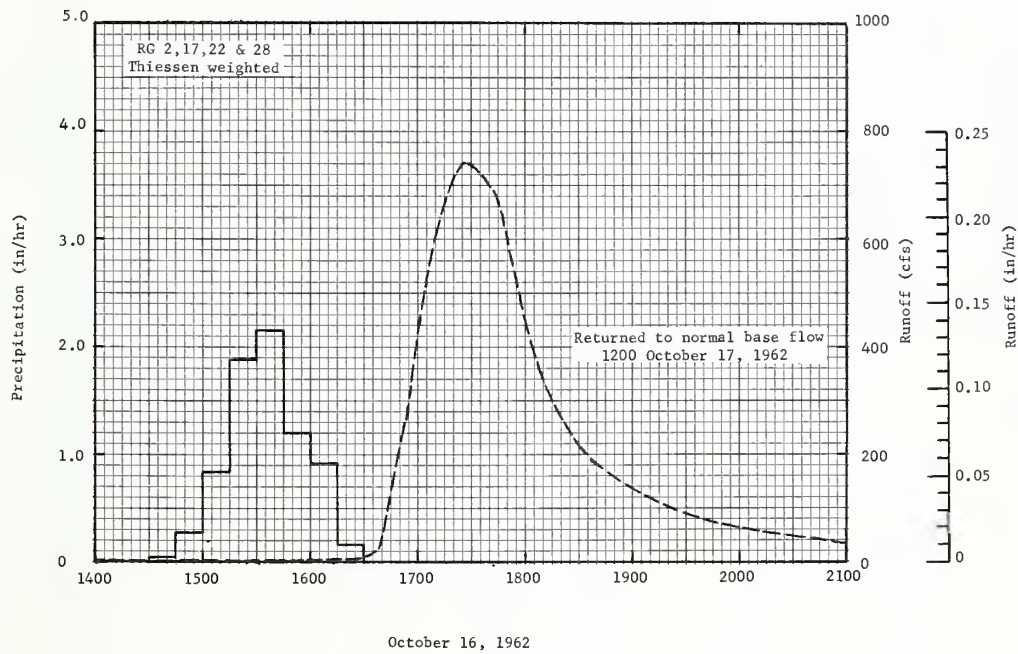
1962 SELECTED RUNOFF EVENTS				OXFORD, MISSISSIPPI			WATERSHED W-17A			62-17		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of September 4-5, 1962												
9-4	.00	1/.0005	9-4	RG 28			9- 4	1634	.10	.0000		
				1600		.00		1804	.08	.0000		
				1607		.69		.08	1818	.30	.0000	
				1636		.02		.09	1832	.51	.0000	
				1641		.48		.13	1906	.15	.0001	
				1739		.02		.15				
				1745		.30	.18	9- 5	2116	.15	.0002	
				1759		.04	.19		2400	.12	.0003	
				1808		.53	.27		0604	.10	.0005	
				1815		.17	.29		2400	2/.08	.0010	
				1821		.70	.36					
				1823		6.30	.57					
				1842		.28	.66					
				4 RG		AVG3/4/5/						
			9-4	1600		.00	.00					
				1615		.16	.04					
				1630		.00	.04					
				1645		.16	.08					
				1700		.08	.10					
				1715		.02	.10					
				1730		.02	.11					
				1745		.08	.13					
				1800		.04	.14					
				1815		.76	.33					
				1830		.72	.51					
				1845		.04	.52					
Watershed conditions: 16% of area in mature cotton and corn, fair cover; 2% in pasture and 52% idle, fair to good cover; 28% in woods, good cover; 2% in bare gullies.												

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0003099. MAP OF WATERSHED SHOWN WITH MAP OF WATERSHED W-17 IN HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.5-5. 1/ RUNOFF PRIOR TO 1634 ON 9-4-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 2/ NORMAL BASE FLOW. 3/ RAIN GAGES 2, 17, 22, AND 28 THIESSEN WEIGHTED. 4/ RAINFALL FOR GAGE 2 IS LISTED ON P. 62.6-3 AND GAGES 17 AND 22 ON P. 62.5-3. 5/ ISOHYETAL MAP ON P. 62.11-5.

1962 SELECTED RUNOFF EVENTS			OXFORD, MISSISSIPPI				WATERSHED W-17A				62.17
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
10-16	.00	1/.0037	Event of October 16-17, 1962								
			10-16	RG	.28		10-16	1534	.06	.0000	
				1447	.00	.00		1554	5.86	.0003	
				1454	.86	.10		1626	5.86	.0012	
				1510	.30	.18		1638	27.28	.0022	
				1515	2.64	.40		1654	274.00	.0146	
				1523	1.20	.56					
				1543	2.64	1.44		1706	556.00	.0402	
				1550	.77	1.53		1726	742.00	.1069	
				1559	2.93	1.97		1744	682.00	.1728	
				1619	.63	2.18		1752	568.00	.1985	
				1627	.22	2.21		1832	213.87	.2788	
				RG	2						
			10-16	1439		.00	1926	93.32	.3214		
				1550		.81	2014	58.66	.3402		
				RG	17		2058	36.95	.3510		
			10-16	1430		.00	2214	18.68	.3618		
				1630		1.31	2314	8.23	.3660		
			10-16	RG	22		10-17	2400	5.33	.3676	
				1500		.00		0204	.76	.3695	
				1623		2.46		0318	.15	.3697	
				4 RG	AVG 2/			0600	.08	.3698	
			10-16	1430	.00	.00	1200	3/.05	.3699		
				1445	.04	.01					
				1500	.28	.08					
				1515	.84	.29					
				1530	1.88	.76					
				1545	2.16	1.22					
				1600	1.20	1.53					
				1615	.92	1.62					
1630	.16	1.66									
Watershed conditions: 16% of area in mature cotton and corn, fair cover; 2% in pasture and 52% idle, fair to good cover; 28% in woods, good cover; 2% in bare gullies.											

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0003099. 1/ RUNOFF PRIOR TO 1534 ON 10-16-62. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGES. 2/ RAIN GAGES 2, 17, 22, AND 28 THIESSEN WEIGHTED. 3/ NORMAL BASE FLOW.





OXFORD, MISSISSIPPI WATERSHED W-17A

MONTHLY PRECIPITATION AND RUNOFF (inches)							OXFORD, MISSISSIPPI WATERSHED W-35A AREA—1,090 ACRES (1.70 SQ. MILES)							62.18		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962 P1/ Q		5.73	7.04	2.81	3.90	1.99	6.45	4.56	2.24	5.16	2.79	2.01	1.66	46.34		
		2.79	2.91	.40	.92	.15	.95	.38	.02	.33	.03	.00	.00	8.88		
STA AV2/P (58-62 Q)		3.59	5.02	4.92	4.38	3.77	3.62	4.35	2.46	4.58	2.23	3.83	4.68	47.43		
		1.32	1.91	1.80	1.10	.83	.24	.23	.11	.32	.08	.31	1.09	9.34		
MEAN P3/ 43 YR		5.97	5.25	5.88	5.02	4.56	4.01	4.30	3.15	3.50	2.96	4.66	5.05	54.31		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	2-23	.59	2-23	.58	2-23	1.11	2-23	1.76	2-23	1.91	2-23	2.01	2-21	2.04	2-21	2.70
MAXIMUMS FOR PERIOD OF RECORD 4/																
1961 to 1962	2-23	.59	2-23	.58	2-23	1.11	2-23	1.76	2-23	1.91	2-23	2.01	2-20	2.63	2-17	3.24
NOTES: Quality of records: P, good; Q, fair. Watershed conditions: About 25% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 73% in pasture and idle land, good cover April to October with fair cover remainder of year; 2% in bare gullies. 1/ Monthly precipitation Thiessen weighted from rain gages 11, 24, and 26. 2/ Precipitation and runoff records began Jan. 1957, but monthly data for 1957 were excluded from the station averages because discharge values were estimated for that year. 3/ Mean P based on 43-yr (1920-62) U. S. Weather Bureau record period at Holly Springs 2N, Miss. 4/ Maximum discharges and volumes were not computed prior to 1961 - poor records 1957-60.																
SOILS: (Revision) Subsoil structure for Ruston fine sandy loam should read: <u>Weak to moderate, fine subangular blocky</u> (instead of weak, fine granular subangular blocky as previously described). Topsoil structure for Providence, Loring, and Grenada soils should read: <u>Weak, fine to medium, granular.</u>																
1962 DAILY PRECIPITATION (inches)							OXFORD, MISSISSIPPI WATERSHED W-35A							62.18		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.16	.26	.00	.00	.01	.46	.00	.00				
2	.00	.00	.00	.00	.00	.91	.41	.33	.00	.00	.00	.00				
3	.00	.00	.00	.00	.00	.96	.00	.00	.00	.00	.04	.00				
4	.00	.00	.00	.00	.00	.48	.00	.00	1.86	.00	.00	.00				
5	.86	.23	.00	.12	.00	.00	.56	.00	.00	.00	.00	.05				
6	.05	.00	.00	.12	.00	.02	.04	.00	.00	.00	.00	.00				
7	.00	.00	.00	.00	.00	.03	.00	.00	.00	.68	.00	.00				
8	.00	.05	.54	.18	.00	.30	.00	.00	.43	.00	.20	.00				
9	.16	.00	.03	.00	.00	.00	.00	.00	.96	.00	.00	.00				
10	.00	.00	.28	.58	.00	.25	.00	.00	.00	.00	.00	.00				
11	.00	.00	.02	1.44	.00	1.43	.36	.00	.00	.00	.59	.00				
12	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00				
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
14	1.13	.00	.00	.00	.00	.00	.00	.00	.99	.00	.00	.00				
15	.06	.54	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00				
16	.00	.00	.00	.00	.07	.00	.00	.00	.30	1.07	.00	.03				
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.52	.01				
18	.00	.57	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00				
19	.05	.00	.00	.00	.00	.10	.00	.00	.00	.00	.13	.00				
20	.04	.08	.47	.00	.00	.00	.00	.00	.00	.46	.00	.00				
21	.12	.28	.00	.00	.00	.13	.00	.00	.00	.12	.11	.56				
22	1.77	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
23	.19	3.35	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00				
24	.12	.00	.00	.00	.00	.75	1.54	.53	.00	.00	.00	.53				
25	.45	.89	.40	.00	.00	.65	1.48	.91	.12	.00	.37	.00				
26	.50	.64	.00	.00	.00	.18	.00	.00	.41	.00	.00	.02				
27	.23	.40	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00				
28	.00	.00	.00	.04	.00	.00	.14	.00	.00	.00	.00	.29				
29	.00	-----	.00	.00	.48	.00	.00	.00	.00	.00	.00	.17				
30	.00	-----	.91	1.02	1.28	.00	.00	.22	.00	.00	.00	.00				
31	.00	-----	.16	-----	.00	-----	.03	.10	-----	.00	-----	.00				
TOTAL	5.73	7.04	2.81	3.90	1.99	6.45	4.56	2.24	5.16	2.79	2.01	1.66				
STA AV	3.59	5.02	4.92	4.38	3.77	3.62	4.35	2.46	4.58	2.23	3.83	4.68				
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4, P. 62.1-2. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 11, 24, AND 26. STATION AVERAGE IS FOR 5-YR RECORD PERIOD 1958-62.																

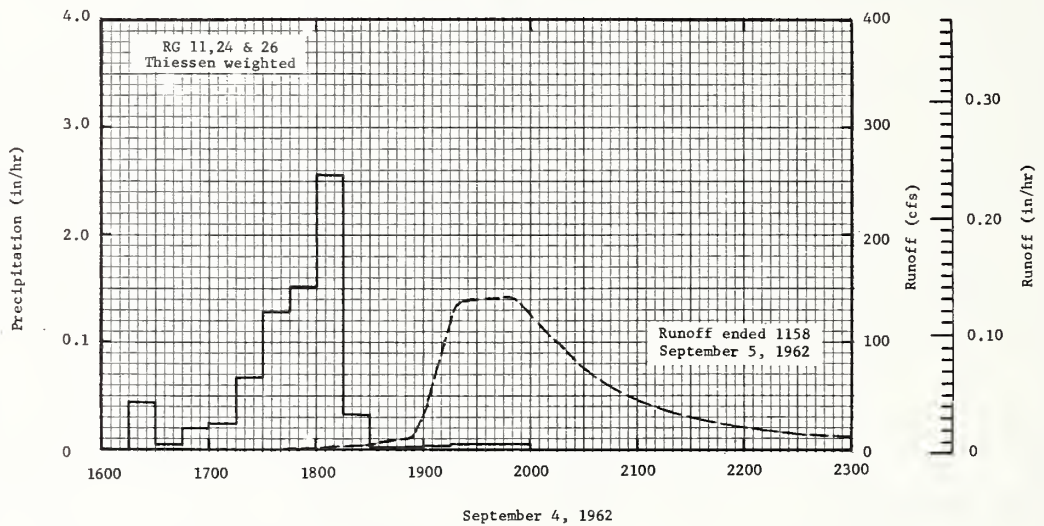
Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1962 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI WATERSHED W-35A 62.18						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.80	.50	.42	.16	6.59	.00	.00	.00	.00	.00	.00	.00
2	.81	.40	.31	.18	.15	1.10	.00	.00	.00	.00	.00	.00
3	.56	.25	.27	.14	.00	1.94	.00	.00	.00	.00	.00	.00
4	.40	.18	.22	.11	.00	6.44	.00	.00	11.16	.00	.00	.00
5	11.19	.43	.18	.12	.00	.19	.05	.00	.34	.00	.00	.00
6	4.24	.22	.20	.15	.00	.04	.02	.00	.00	.00	.00	.00
7	1.21	.17	.17	.14	.00	.00	.00	.00	.00	1.15	.00	.00
8	.38	.18	.88	.16	.00	.00	.00	.00	.00	.01	.00	.00
9	.33	.18	.90	.10	.00	.00	.00	.00	.91	.00	.00	.00
10	.32	.13	1.16	.11	.00	.00	.00	.00	.07	.00	.00	.00
11	.22	.11	.73	30.56	.00	32.23	.00	.00	.00	.00	.00	.00
12	.29	.11	.35	8.02	.00	.52	.00	.00	.00	.00	.00	.00
13	.27	.07	.20	.90	.00	.00	.00	.00	.00	.00	.00	.00
14	15.17	.08	.18	.40	.00	.00	.00	.00	2.63	.00	.00	.00
15	13.56	.42	.15	.22	.00	.00	.00	.00	.04	.00	.00	.00
16	1.17	.11	.12	.12	.00	.00	.00	.00	.08	.00	.00	.00
17	.80	.04	.08	.11	.00	.00	.00	.00	.00	.00	.00	.00
18	.49	4.23	.07	.10	.00	.00	.00	.00	.00	.00	.00	.00
19	.31	1.33	.09	.04	.00	.00	.00	.00	.00	.00	.00	.00
20	.24	.49	.51	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.20	2.05	.57	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	33.99	1.18	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	10.37	91.88	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	3.03	.21	.12	.00	.00	.00	4.04	.00	.00	.00	.00	.00
25	8.47	12.09	.29	.00	.00	.23	13.20	.90	.00	.00	.00	.00
26	5.42	5.24	.11	.00	.00	.53	.01	.08	.00	.00	.00	.00
27	8.47	8.55	.03	.00	.00	.01	.00	.00	.00	.00	.00	.00
28	1.94	2.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.70	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.63	-----	.22	.18	.00	.00	.00	.00	.00	.00	.00	.00
31	.53	-----	9.57	-----	.00	-----	.00	.00	-----	.00	-----	.00
MEAN	4.11	4.75	.59	1.40	.22	1.44	.56	.03	.51	.04	.00	.00
INCHES	2.79	2.91	.40	.92	.15	.95	.38	.02	.33	.03	.00	.00

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0218365. QUALITY OF RECORDS: FAIR.

1962 SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI WATERSHED W-35A 62.18						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of September 4-5, 1962										
9-4	.00	.0000	9-4	11	RG		9-4	1740	.00	.0000
				1655	.00	.00		1826	4.14	.0014
				1717	.08	.03		1840	8.87	.0028
				1735	.77	.26		1854	11.29	.0049
				1741	2.90	.55		1902	41.70	.0081
				1755	1.67	.94				
				1759	1.20	1.02		1920	138.27	.0326
				1810	4.58	1.86		1950	141.87	.0962
				1816	1.30	1.99		2018	97.00	.1468
				1825	.07	2.00		2102	45.20	.1942
				1908	.01	2.01		2142	25.50	.2156
				1936	.06	2.04		2232	14.00	.2305
				2002	.02	2.05		2400	4.95	.2431
				3 RG	AVG 1/2/3/		9-5	0136	1.41	.2478
9-4	.00	.00	9-4	1615	.00	.00		0346	.34	.2495
				1630	.44	.11		0558	.16	.2500
				1645	.04	.12		1158	.00	.2504
				1700	.20	.17				
				1715	.24	.23				
				1730	.68	.40				
				1745	1.28	.72				
				1800	1.52	1.10				
				1815	2.56	1.74				
				1830	.32	1.82				
				1845	.01	1.82				
				1900	.01	1.82				
				1915	.02	1.83				
				1930	.04	1.84				
				1945	.04	1.85				
				2000	.04	1.86				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009099. MAP OF WATERSHED SHOWN WITH MAP OF WATERSHED W-35, IN HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.12-5. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 1/ RAIN GAGES 11, 24, AND 26 THIESSEN WEIGHTED. 2/ RAINFALL FOR GAGE 24 IS LISTED ON P. 62.3-3 AND GAGE 26 ON P. 62.10-3. 3/ ISOHYETAL MAP ON P. 62.11-5.



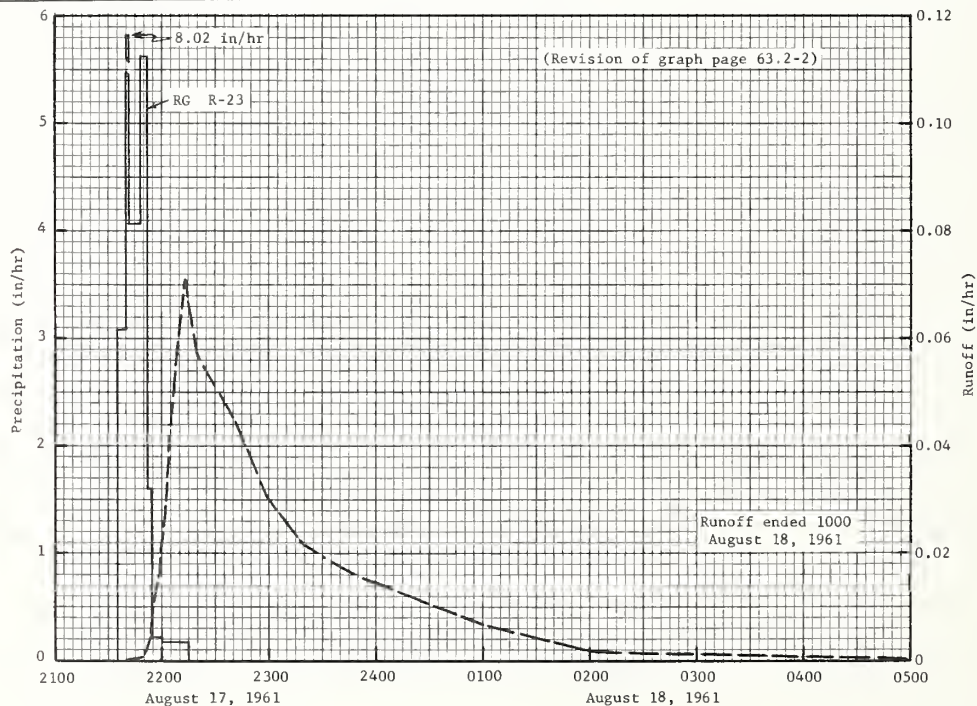
OXFORD, MISSISSIPPI WATERSHED W-35A

MONTHLY PRECIPITATION AND RUNOFF (Inches)								TOMBSTONE, ARIZONA WATERSHED W-1 AREA—36,900 ACRES (57.66 SQ. MILES)								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.32 .00	.05 .00	.46 .00	.00 .00	.00 .00	.14 .00	4.04 .16	.34 .00	1.57 .09	.18 .00	.61 .00	.89 .00	9.60 .25			
STA AV 2/ P (58-62) Q	.66 .00	.42 .00	.53 .00	.14 .00	T .00	.39 T	2.64 .08	2.74 .15	1.20 .03	.96 .00	.44 .00	.63 .00	10.75 .26			
MEAN P 3/ 65 YR	.85	.81	.63	.29	.19	.52	3.61	3.55	1.50	.69	.63	.86	14.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								TOMBSTONE, ARIZONA WATERSHED W-1								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	9-24	.0331	7-29	.0260	7-29	.0349	7-29	.0721	7-29	.0739	7-29	.0739	7-28	.0789	7-24	.1530
MAXIMUMS FOR PERIOD OF RECORD																
1957 to 1962 4/ 1957	8-17 1957	.5360	8-17 1957	.3186	8-17 1957	.3729	8-17 1957	.4039	8-17 1957	.4039	8-17 1957	.4039	8-17 1957	.4039	8-17 1957	.4158
Notes: Quality of records: Monthly P, good; Q, poor; annual maximum discharges and volumes, poor. Watershed conditions: 65% of area in desert shrubs (whitethorn, creosotebush, and tarbush), with 23% cover and 2% grass cover. 35% is grassland, with approximately 20% grass cover (crown spread) and 5% shrub cover. Watersheds W-2, W-3, W-4, W-5, and W-6 lie within the boundaries of W-1. 1/ Monthly precipitation is arithmetic average of rain gages on watershed. 2/ Precipitation records began in Jan. 1954; runoff records in May 1954. Incomplete runoff records in 1954 and 1957; no runoff records in 1955 and 1956. 3/ Mean P based on 65-yr. (1897-1961) U. S. Weather Bureau record period at Tombstone, Ariz. 4/ No maximums for 1954, 1955, and 1956, or through July 1957.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1962. FOR CONTOUR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 63.1-2.																

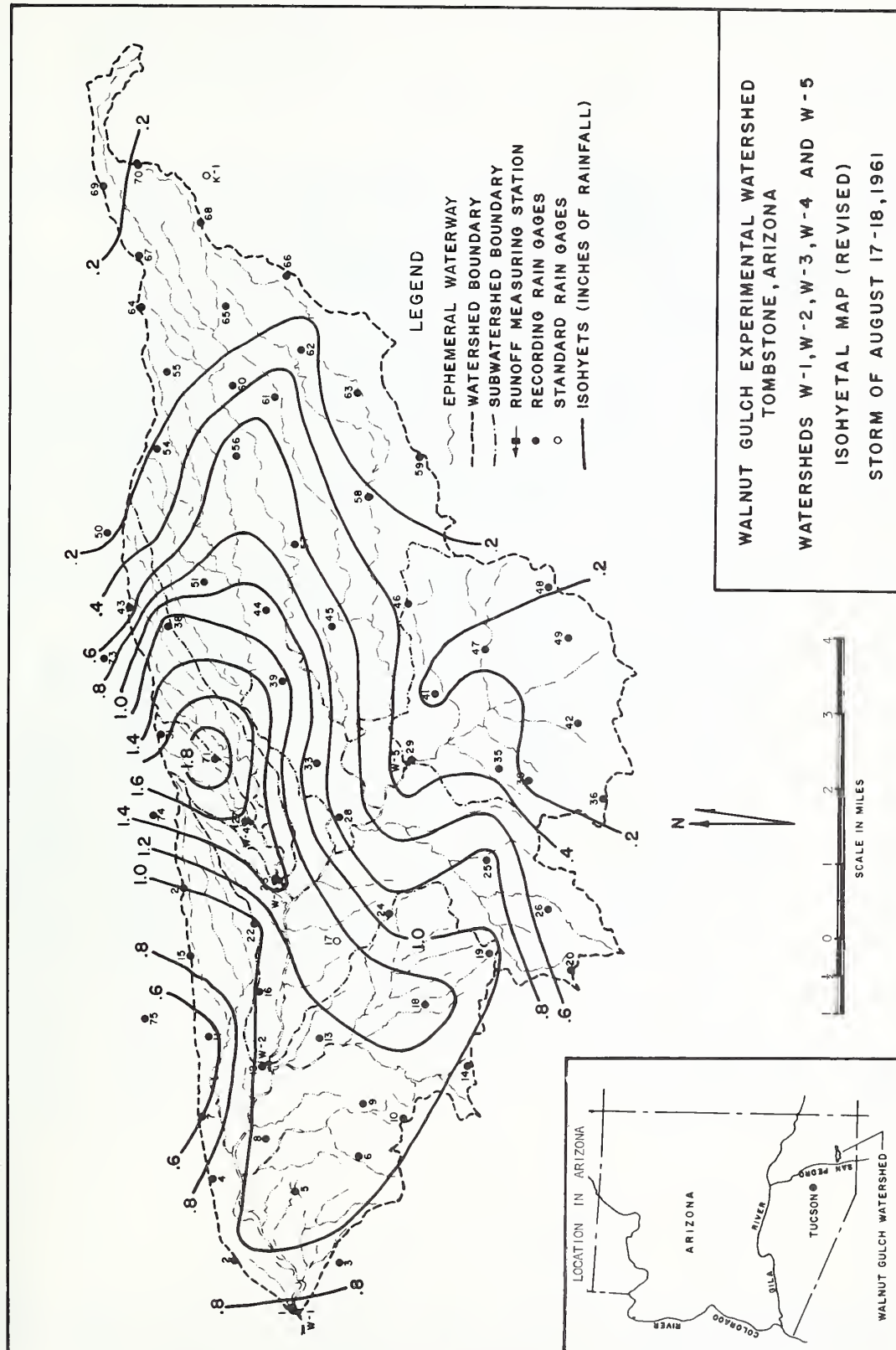
REVISIONS OF PREVIOUSLY PUBLISHED DATA SHEETS

1961 SELECTED RUNOFF EVENTS			TOMBSTONE, ARIZONA WATERSHED W-2							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 17-18, 1961 (Revision of page 63.2-1)										
RG R-23			8-17	RG	R-23 1/		8-17			
7-31	.03	.0120		2135	.00	.00		2138	.00000	.00000
8-8	.01	.0000		2140	3.08	.26		2140	.00000	.00000
8-12	.01	.0000		2142	8.02	.52		2145	.00008	.00000
8-14	.03	.0000		2148	4.07	.93		2147	.00026	.00001
				2152	5.62	1.31		2149	.00060	.00002
				2154	1.60	1.36		2150	.00107	.00003
				2200	.21	1.38		2152	.00202	.00008
				2215	.17	1.42		2154	.00474	.00019
								2155	.00957	.00031
RG R-24			8-17	RG	R-24 1/		8-18			
7-30	.09	.0000		2135	.00	.00		2159	.01666	.00118
8-2	.02	.0000		2135	.00	.00		2200	.02238	.00151
8-3	.02	.0000		2146	2.35	.43		2202	.02796	.00235
8-4	.04	.0000		2154	2.48	.76		2203	.03452	.00287
				2204	.42	.83		2207	.05119	.00573
8-6	.22	.0000		2216	.20	.87		2211	.06463	.00959
8-8	.10	.0000						2213	.07095	.01185
8-11	.11	.0000						2215	.06608	.01413
8-13	.73	.001						2220	.05690	.01925
8-14	.05	.0000						2230	.05119	.02826
8-15	.11	.0000						2240	.04564	.03633
Watershed Conditions: 55% of area supports desert shrubs; whitethorn, tarbush and creosote-bush with 23% shrub cover and 2% grass cover. 45% is grassland with 20% cover (crown spread) of grasses and 5% shrub cover. (Includes subwatersheds W-3, W-4, and W-5).								2300	.02983	.04859
								2320	.02164	.05717
								2350	.01589	.06655
								2400	.01458	.06909
								0100	.00678	.07977
								0200	.00193	.08413
								0400	.00043	.08649
								1000	.00000	.08907

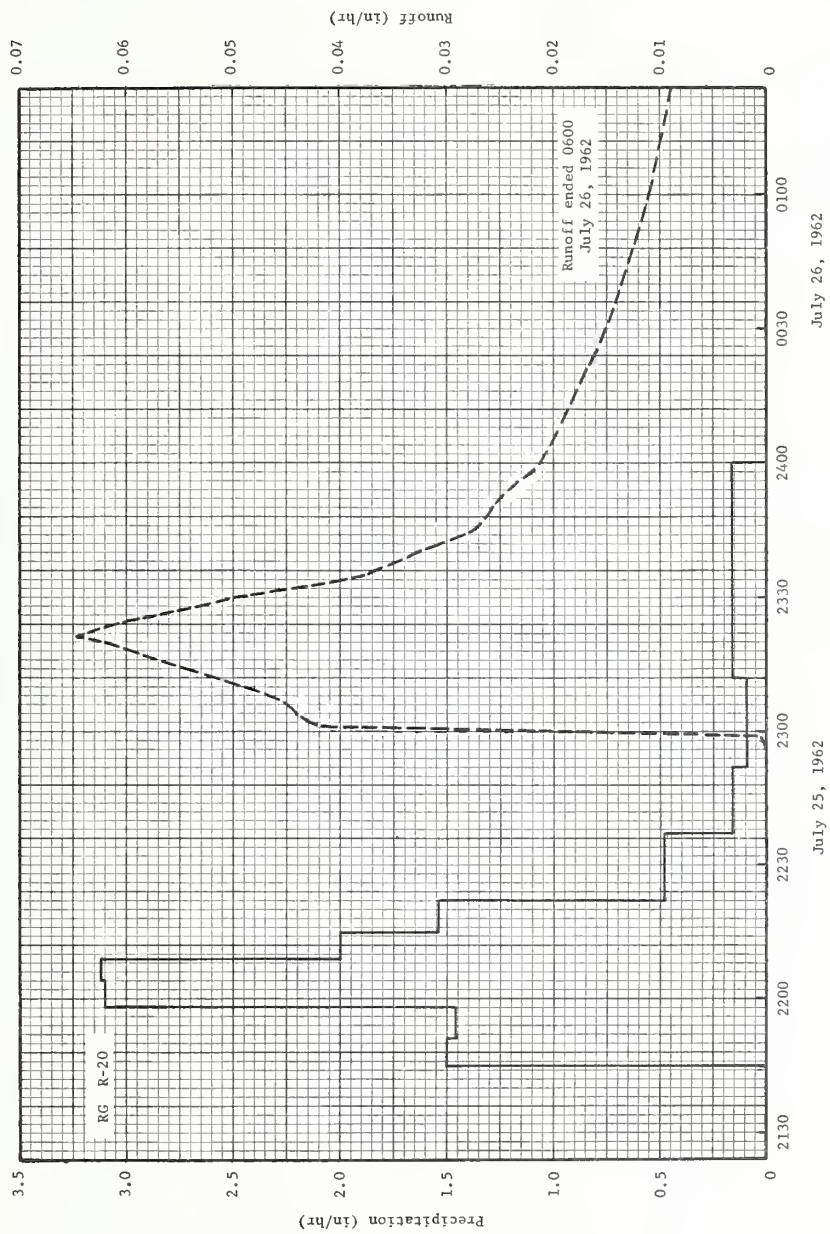
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 28,330. FOR MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES: USDA MISC. PUB. 945 (1956-59) P. 63.1-5, CULTURAL MAP; AND USDA MISC. PUB. 994 (1960-61) P. 63.1-2, CONTOUR MAP. 1/ PREVIOUSLY PUBLISHED RAINFALL DATA FOR R-23 AND R-24 REVISED AND REPLOTTED IN FOLLOWING GRAPH AND ISOHYETS REVISED ON MAP ON NEXT PAGE.



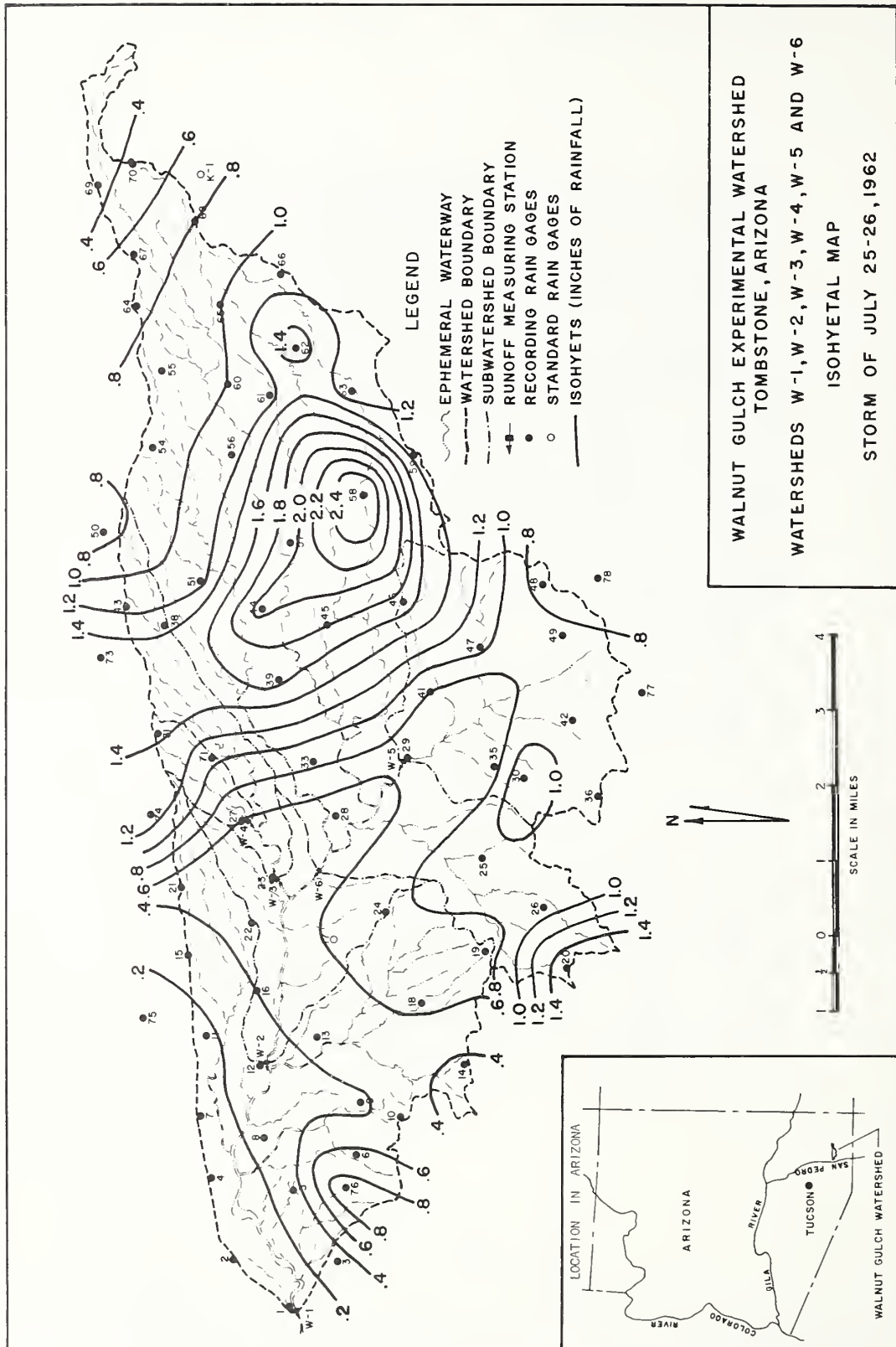
TOMBSTONE, ARIZONA WATERSHED W-2



MONTHLY PRECIPITATION-AND RUNOFF (Inches)								TOMBSTONE, ARIZONA WATERSHED W-2 AREA—28,100 ACRES (43.9 SQ. MILES)								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.28 .00	.04 .00	.50 .00	.00 .00	.00 .00	.19 .00	3.91 .15	.35 .00	1.66 .06	.13 .00	.57 .00	.88 .00	9.51 .21			
STA AV 2/ P (54-62) Q	.82 .00	.38 .00	.54 .00	.10 .00	.10 .00	.53 T	3.44 .18	3.13 .19	.80 .02	.82 .01	.26 .00	.42 .00	11.34 .40			
MEAN P 3/ 65 YR	.85	.81	.63	.29	.19	.52	3.61	3.55	1.50	.69	.63	.86	14.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								TOMBSTONE, ARIZONA WATERSHED W-2								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	7-25	.0646	7-25	.0417	7-25	.0565	7-25	.0734	7-25	.0734	7-25	.0734	7-24	.0734	7-24	.1504
MAXIMUMS FOR PERIOD OF RECORD																
1954 to 1962 4/	8-17 1957	.6707	8-17 1957	.4315	8-17 1957	.5845	8-17 1957	.6682	8-17 1957	.6682	8-17 1957	.6682	8-17 1957	.6682	7-19 1955	.8394
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: 55% of area in desert shrubs, 45% in grassland. Watersheds W-3, W-4, W-5, and W-6 lie within the boundaries of W-2. 1/ Monthly precipitation is arithmetic average of 57 rain gages. 2/ Precipitation and runoff records began Jan. 1954. No runoff record in 1958; average Q based on 8 years of record. 3/ Mean P based on 65-yr (1897-1961) U.S. Weather Bureau record period at Tombstone, Ariz. 4/ No maximums taken for 1958.																
1962 SELECTED RUNOFF EVENT								TOMBSTONE, ARIZONA WATERSHED W-2								
Antecedent conditions				Rainfall				Runoff								
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of July 25-26, 1962 5/																
7-4-62	RG R-24 .08	.00000	7-25-62 2135	RG R-24 .00	.00	7-25-62 2256	.00000	.00000								
7-18	1.04	.00300	2148	.46	.10	2257	.00013	.00000								
7-21	.27	.00000	2152	1.65	.21	2258	.00065	.00001								
7-24	.73	.00004	2200	1.20	.37	2259	.00315	.00004								
7-25	6/ .15	.00000	2214	.60	.51	2300	.01666	.00020								
			2230	.26	.58	2301	.04056	.00068								
			2301	.08	.62	2302	.04321	.00138								
			2332	.04	.64	2305	.04458	.00358								
			2351	.09	.67	2310	.04928	.00749								
7-4-62	RG R-20 .52	.00000	7-25-62 2145	RG R-20 .00	.00	2315	.05606	.01188								
7-17	.06	.00000	2151	1.50	.15	2320	.06276	.01683								
7-18	2.13	.00300	2158	1.46	.32	2321	.06463	.01789								
7-20	.12	.00000	2204	3.10	.63	2325	.05909	.02201								
						2330	.04967	.02654								
7-21	.46	.00000	2209	3.12	.89	2335	.03735	.03017								
7-24	.33	.00004	2215	2.00	1.09	2340	.03301	.03310								
			2222	1.54	1.27	2345	.02725	.03561								
			2237	.48	1.39	2350	.02591	.03783								
			2252	.16	1.43	2400	.02135	.04177								
			2312	.09	1.46	7-26-62 0030	.01500	.05086								
			2400	.16	1.59	0100	.01112	.05739								
						0200	.00600	.06595								
						0300	.00300	.07045								
						0400	.00106	.07248								
						0500	.00035	.07318								
						0600	.00000	.07336								
Watershed conditions: 55% of area supports desert shrubs (whitethorn, tarhush, and creosotehush), with 23% cover and 2% grass cover. 45% is grassland, with 20% cover (crown spread) of grasses and 5% cover of shrubs.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 28,330. FOR CONTOUR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 63.1-2. 5/ ISOHYETAL MAP ON P. 63.2-3. 6/ PRIOR TO 2135.																



TOMBSTONE, ARIZONA WATERSHED W-2

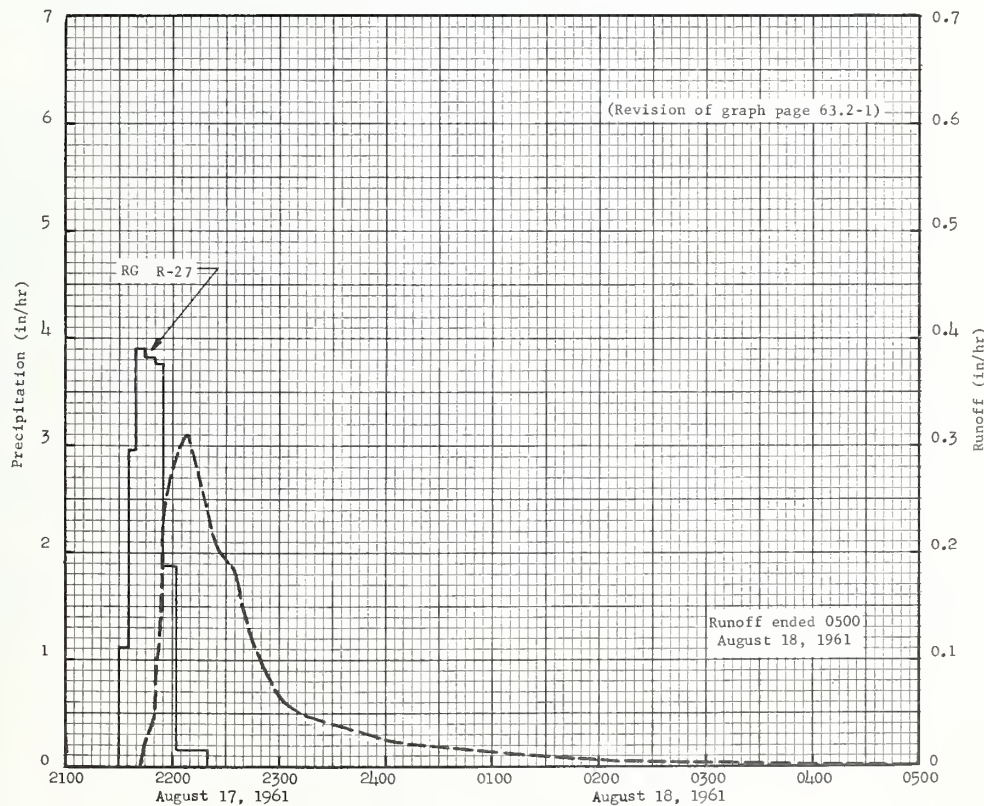


REVISIONS OF PREVIOUSLY PUBLISHED DATA SHEETS

1961 SELECTED RUNOFF EVENTS			TOMBSTONE, ARIZONA WATERSHED W-3							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 17-18, 1961 (Revision of page 63.3-1)										
	RG R-27		8-17	RG	R-27 1/		8-17			
7-31	.03	.00		2130	.00	.00		2142	.0000	.0000
8-6	.01	.00		2135	1.11	.09		2143	.0083	.0001
8-8	.02	.00		2139	2.96	.29		2144	.0152	.0003
8-11	.01	.00		2144	3.90	.61		2145	.0241	.0006
8-12	.05	.00		2150	3.83	1.00		2150	.0492	.0036
8-13	.01	.00		2155	3.76	1.31		2151	.1028	.0049
8-14	.03	.00		2202	1.89	1.53		2153	.1207	.0086
8-15	.01	.00		2220	.15	1.58		2154	.1632	.0110
8-17	.03	.00						2155	.2414	.0144
	RG R-38		8-17	RG	R-38 1/			2200	.2816	.0362
7-31	.30	.00		2117	.00	.00		2208	.3107	.0757
8-2	.13	.00		2126	.27	.04		2215	.2682	.1094
8-13	.07	.00		2132	2.10	.25		2225	.2056	.1489
8-15	.10	.00		2136	3.45	.48		2235	.1833	.1813
8-17	2/ .01	.00		2141	2.40	.68		2245	.1162	.2063
				2146	2.52	.89		2300	.0670	.2292
				2153	2.83	1.22		2315	.0483	.2436
				2158	.48	1.26		2400	.0250	.2711
				2216	.03	1.27				
							8-18	0100	.0134	.2903
								0200	.0056	.2998
								0300	.0015	.3034
								0500	.0000	.3049

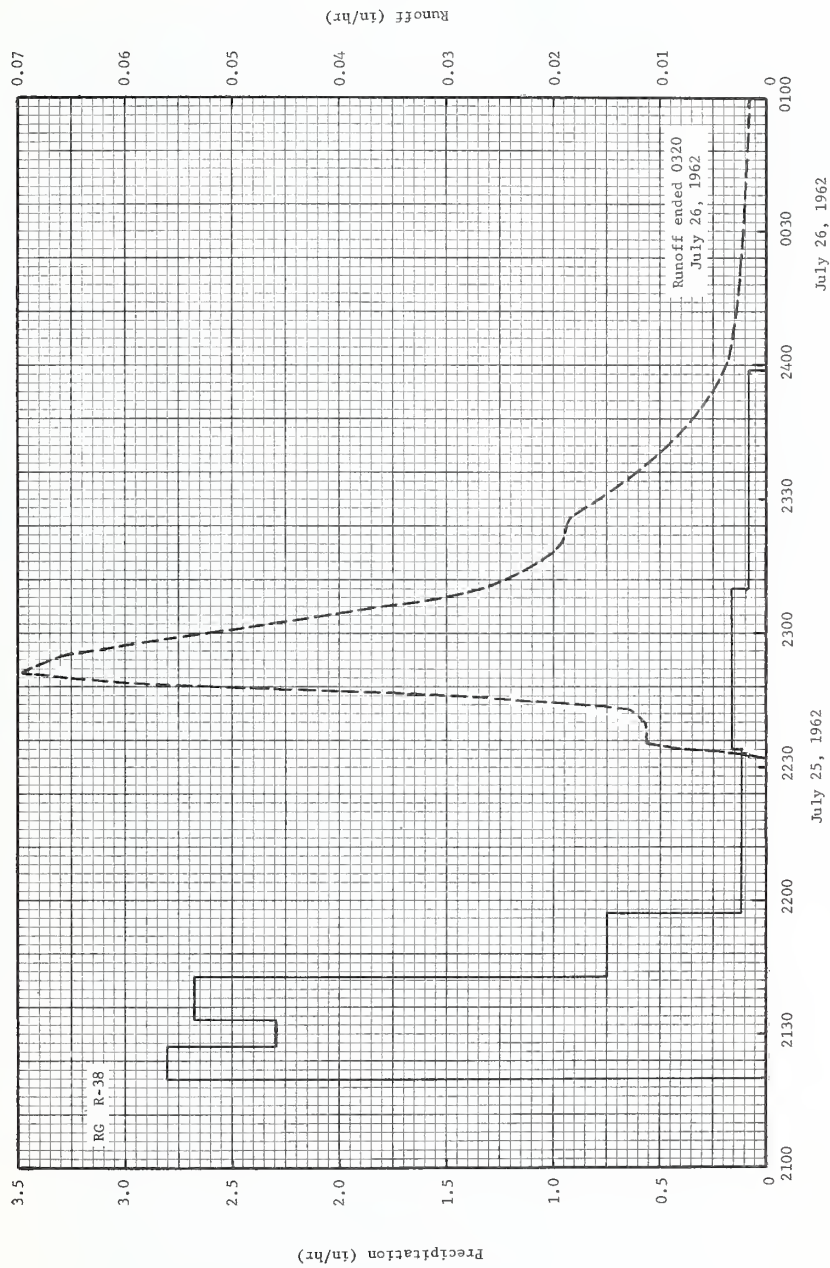
Watershed Conditions: 55% of area supports desert shrubs; whitethorn, creosotebush and tarbush; shrubs cover 23% of area with 2% grass understory. 45% grassland with a grass canopy of 20%.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2,238. FOR MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES; USDA MISC. PUB. 945 (1956-59) P. 63.1-5, CULTURAL MAP; AND USDA MISC. PUB. 994 (1960-61) P. 63.1-2, CONTOUR MAP. 1/ PREVIOUSLY PUBLISHED RAINFALL DATA FOR R-27 AND R-38 REVISED AND GRAPH BELOW PLOTTED. REVISED ISOHYETALS SHOWN ON MAP P. 63.2-3. 2/ RAINFALL PRIOR TO 2125.



TOMBSTONE, ARIZONA WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF (Inches)								TOMBSTONE, ARIZONA WATERSHED W-3 AREA—2,220 ACRES (3.47 SQ. MILES)								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.18 .00	.17 .00	.43 .00	.00 .00	.00 .00	.08 .00	4.21 .11	.34 .00	1.66 T	.15 .00	.48 .00	.65 .00	9.35 .11			
STA AV 2/ P (55-62) Q	.80 .00	.40 .00	.49 .00	.17 .00	.06 .00	.36 .00	3.71 .56	2.96 .17	.80 .00	.75 .00	.29 .00	.42 .00	11.21 .73			
MEAN P 3/ 65 YR	.85	.81	.63	.29	.19	.52	3.61	3.55	1.50	.69	.63	.86	14.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								TOMBSTONE, ARIZONA WATERSHED W-3								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962	7-25	.0696	7-25	.0320	7-25	.0360	7-25	.0383	7-25	.0383	7-25	.0383	7-24	.0386	7-24	.0757
MAXIMUMS FOR PERIOD OF RECORD																
1954 to 1962 4/	7-19 1955	1.2750	7-19 1955	.5750	7-22 1955	.7565	7-22 1955	.8450	7-22 1955	.8456	7-19 1955	1.2520	7-19 1955	1.2520	7-19 1955	2.9288
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: 55% in desert shrubs, 45% grassland. Watershed W-4 lies within the boundaries of W-3. 1/ Monthly precipitation is arithmetic average of rain gages on watershed. 2/ Precipitation records began Aug. 1954; runoff records, May 1954. No runoff records for 1956 and 1957; average Q based on 6 years. Part-year amounts for 1954 not included in averages. 3/ Mean P based on 65-yr (1897-1961) U.S. Weather Bureau record period at Tombstone, Ariz. 4/ No maximum volumes for 1956 and 1957.																
1962 SELECTED RUNOFF EVENT								TOMBSTONE, ARIZONA WATERSHED W-3								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of July 25-26, 1962 5/																
7-18-62	RG R-31 .82	.0321	7-25-62	RG R-31		7-25-62										
7-19	.03	.0000	2125	.00	.00	2232	.00000	.00000								
7-21	.30	.0000	2131	1.50	.15	2233	.00364	.00003								
			2136	2.40	.35	2234	.00799	.00013								
			2146	2.46	.76	2235	.01133	.00029								
			2152	1.20	.88	2240	.01133	.00123								
			2159	1.45	1.05	2243	.01305	.00184								
			2205	1.20	1.17	2245	.02351	.00245								
			2236	.19	1.27	2248	.05248	.00435								
			2308	.11	1.33	2251	.06964	.00740								
			2340	.07	1.37	2255	.06598	.01192								
7-18-62	RG R-38 .59	.0321	7-25-62	RG R-38		2300	.05248	.01686								
7-19	.15	.0000	2120	.00	.00	2305	.03811	.02063								
7-21	.10	.0000	2127	2.80	.33	2310	.02672	.02333								
7-22	.05	.0000	2133	2.29	.56	2320	.01917	.02715								
			2143	2.68	1.00	2325	.01872	.02873								
			2157	.75	1.17	2330	.01568	.03016								
			2234	.12	1.25	2340	.01036	.03233								
			2310	.16	1.35	2350	.00620	.03371								
			2359	.08	1.42	2400	.00393	.03455								
Watershed conditions: 55% supports desert shrubs, with a cover of 23% with a grass understory of 2%. 45% grassland with a grass canopy of 20%.																
						7-26-62										
						0020	.00251	.03562								
						0100	.00150	.03695								
						0200	.00062	.03801								
						0300	.00003	.03834								
						0320	.00000	.03834								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2,238. FOR CONTOUR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 63.1-2. 5/ ISOHYETAL MAP ON P. 63.2-3.																



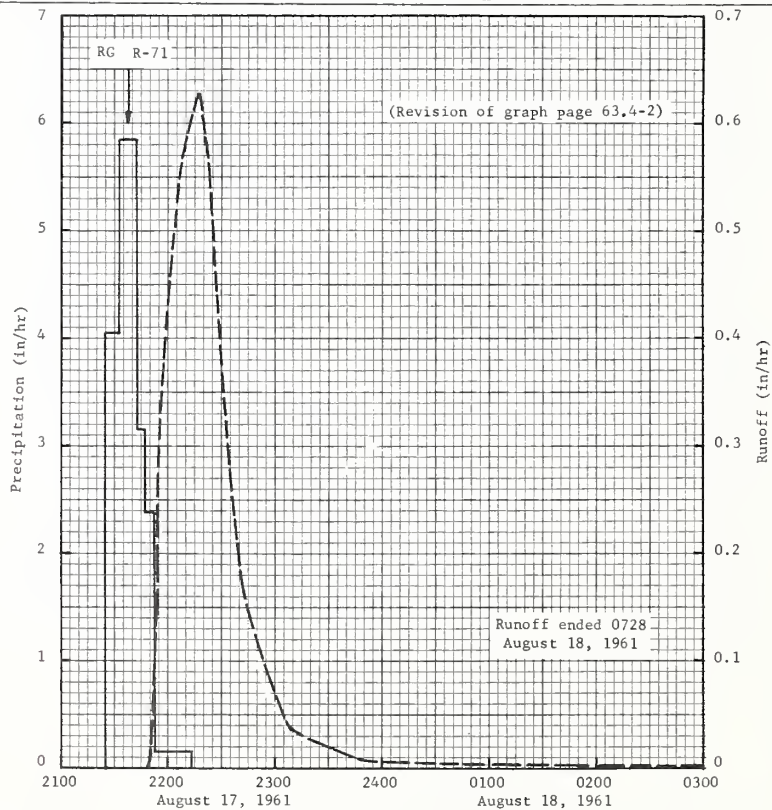
TOMBSTONE, ARIZONA WATERSHED W-3

REVISIONS OF PREVIOUSLY PUBLISHED DATA SHEETS

1961 SELECTED RUNOFF EVENTS						TOMBSTONE, ARIZONA WATERSHED W-4				
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 17-18, 1961 (Revision of page 63.4-1)										
	RG R-31		8-17	RG	R-31 ^{1/}		8-17			
7-31	.15	.00		2125	.00	.00		2148	.0000	.0000
8-2	.17	.00		2128	2.20	.11		2151	.0142	.0004
8-13	.13	.00		2132	3.45	.34		2153	.0832	.0020
8-15	.06	.00		2136	3.75	.59		2154	.2319	.0046
8-17	<u>2/.13</u>	.00		2140	3.60	.83		2158	.3823	.0251
				2144	3.15	1.04		2202	.4832	.0539
				2148	3.15	1.25		2208	.5699	.1066
				2151	2.40	1.37		2213	.6000	.1553
				2158	1.11	1.50		2218	.6284	.2065
				2210	.15	1.53		2223	.5629	.2561
	RG R-71		8-17	RG	R-71 ^{1/}			2233	.3229	.3300
7-31	.10	.00		2125	.00	.00		2243	.1588	.3702
8-2	.12	.00		2132	4.05	.47		2308	.0375	.4111
8-13	.05	.00		2142	5.86	1.45		2353	.0081	.4282
8-14	.02	.00		2147	3.15	1.71	8-18	0053	.0029	.4337
8-15	.05	.00		2152	2.39	1.91		0253	.0011	.4377
8-17	<u>2/.10</u>	.00		2213	.15	1.96		0453	.0003	.4391
								0728	.0000	.4395

Watershed Conditions: 25% of area has shrub cover of white-thorn, creosotebush, and tarbush.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 565. FOR MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES: USDA MISC. PUB. 945 (1956-59) P. 63.1-5, CULTURAL MAP; AND USDA MISC. PUB. 994 (1960-61) P. 63.1-2, CONTOUR MAP. ^{1/} PREVIOUSLY PUBLISHED RAINFALL DATA FOR R-31 AND R-71 REVISED AND REPLOTTED ON GRAPH BELOW. SEE CORRECTED ISOHYETAL MAP P. 63.2-3. ^{2/} RAINFALL PRIOR TO 2125.

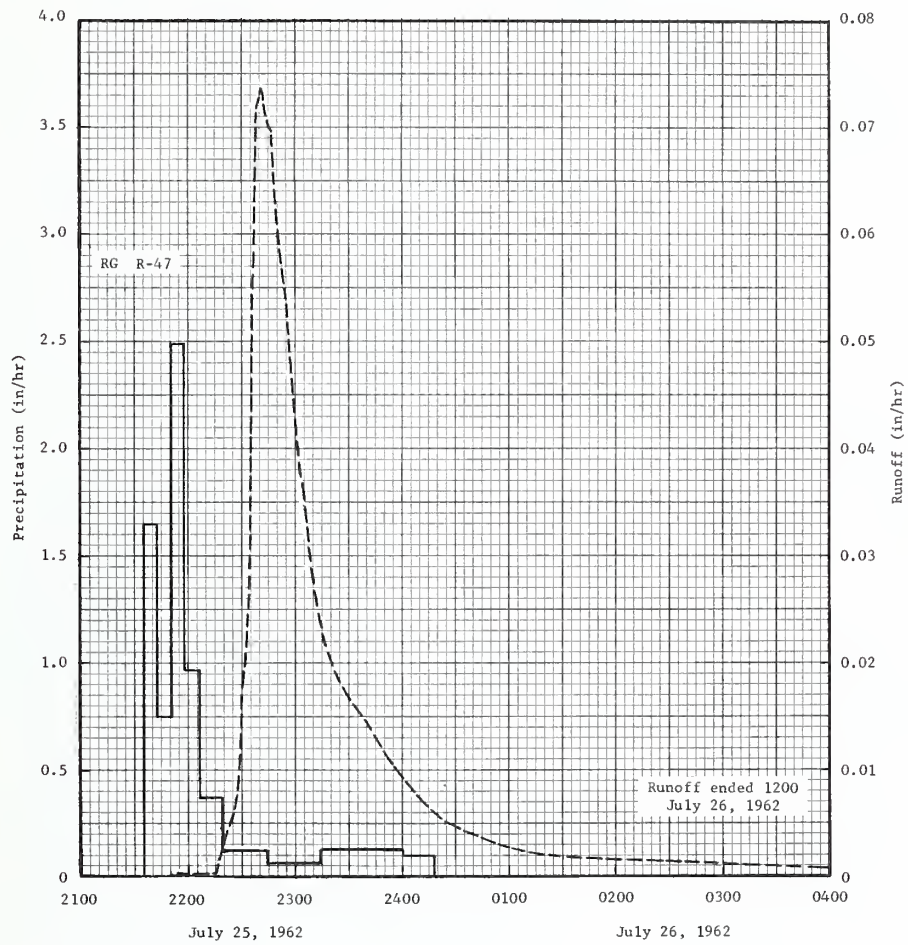


TOMBSTONE, ARIZONA WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (Inches)									TOMBSTONE, ARIZONA WATERSHED W-4 AREA—560 ACRES							
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	1.29 .00	.34 .00	.42 .00	.00 .00	.00 .00	.00 .00	5.10 .06	.41 .00	1.06 .01	.14 .00	.45 .00	.51 .00	9.72 .07			
STA AV 2/ P (55-62) Q	.74 .00	.37 .00	.50 .00	.15 .00	.04 .00	.38 .00	3.99 .72	3.20 .20	.65 T	.71 .00	.30 .00	.40 .00	11.43 .92			
MEAN P 3/ 65 YR	.85	.81	.63	.29	.19	.52	3.61	3.55	1.50	.69	.63	.86	14.13			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS									TOMBSTONE, ARIZONA WATERSHED W-4							
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
	Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.		
1962	7-18	.0285	7-18	.0260	7-18	.0338	7-18	.0361	7-18	.0361	7-18	.0361	7-18	.0472		
MAXIMUMS FOR PERIOD OF RECORD																
1954 to 1962	7-19 1955	2.5194	7-19 1955	1.0655	7-19 1955	1.2328	7-19 1955	1.2911	7-19 1955	1.2911	7-19 1955	1.9365	7-19 1955	1.9371	7-19 1955	4.7818
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good: Watershed conditions: Shrub cover of 25%. 1/ Monthly precipitation is arithmetic average of rain gages on watershed. 2/ Precipitation record began Aug. 1954. Runoff records began June 1954. Part-year amounts for 1954 not included in averages. 3/ Mean P based on 65-yr. (1897-1961) U. S. Weather Bureau record period at Tombstone, Ariz.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1962. FOR CONTOUR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 63.1-2.																

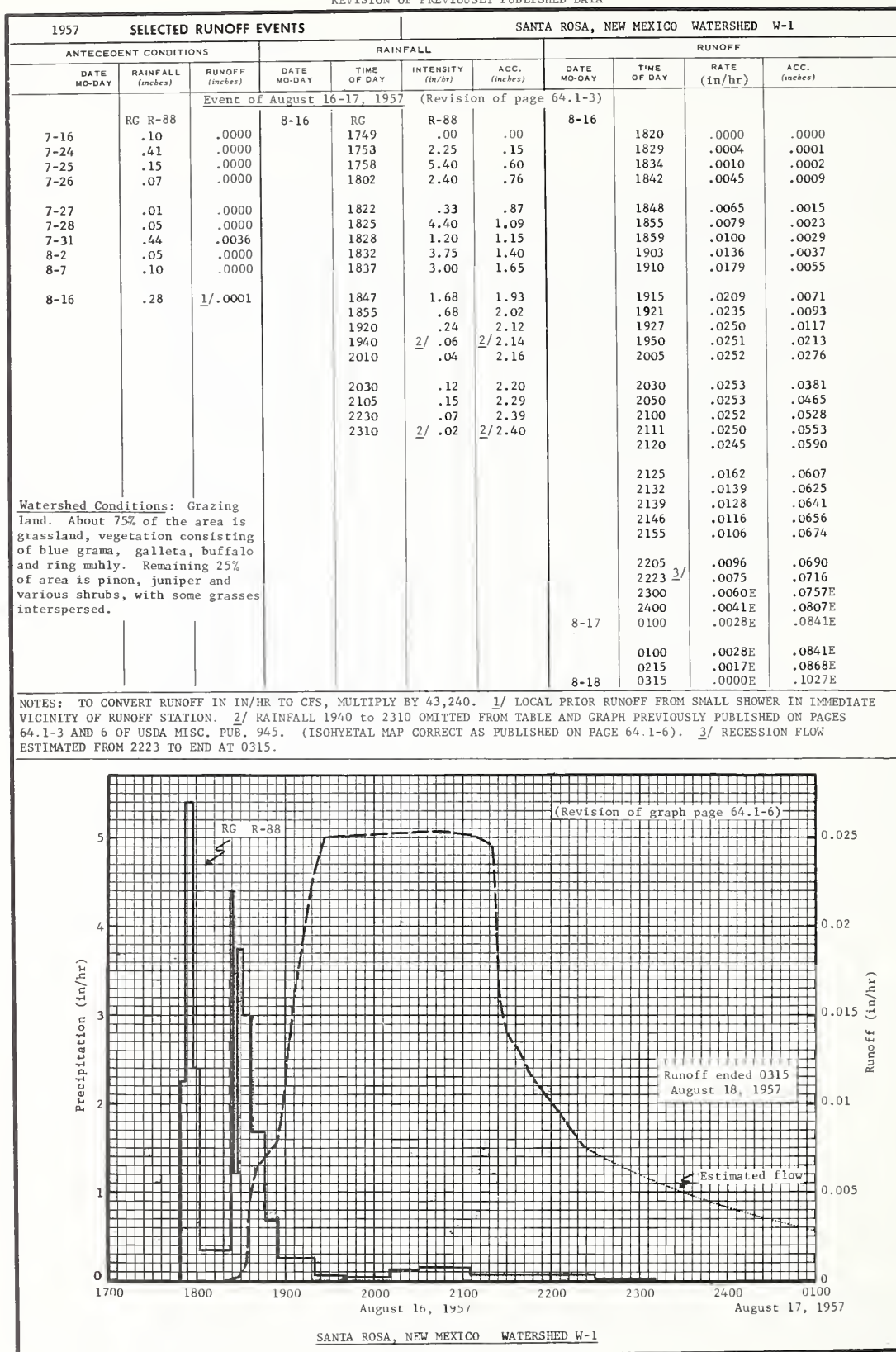
MONTHLY PRECIPITATION AND RUNOFF (Inches)								TOMBSTONE, ARIZONA WATERSHED W-5 AREA—5,510 ACRES (8.61 SQ. MILES)							
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual		
1962 P 1/ Q	1.17 .00	.01 .00	.58 .00	.00 .00	.00 .00	.07 .00	4.47 .10	.29 T	1.11 .01	.03 .00	.56 .00	.92 .00	9.21 .11		
STA AV 2/ (54-62) P Q	.85 .00	.33 .00	.58 .00	.11 .00	.09 .00	.45 .00	3.46 .10	3.25 .19	.62 T	.95 .12	.27 .00	.43 .00	11.39 .41		
MEAN P 3/ 65 YR	.85	.81	.63	.29	.19	.52	3.61	3.55	1.50	.69	.63	.86	14.13		
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								TOMBSTONE, ARIZONA WATERSHED W-5							
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days	
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.
1962		7-25	.0738	7-25	.04	7-25	.05	7-25	.06	7-25	.06	7-25	.06	7-25	.10
MAXIMUMS FOR PERIOD OF RECORD															
1954 to 1962	10-4 1954	.9540	10-4 1954	.6245	10-4 1954	.8354	10-4 1954	1.0512	10-4 1954	1.0516	10-4 1954	1.0516	10-4 1954	1.0516	10-4 1954
Notes: Quality of records: Monthly P, good; Q, fair; annual maximum discharges and volumes, fair. Watershed conditions: 78% of area in desert shrubs, 22% grassland. 1/ Monthly precipitation is arithmetic average of rain gages on watershed. 2/ Precipitation and runoff records began Jan. 1954. 3/ Mean P based on 65-yr. (1897-1961) U. S. Weather Bureau record period at Tombstone, Ariz.															
1962 SELECTED RUNOFF EVENT								TOMBSTONE, ARIZONA WATERSHED W-5							
Antecedent conditions			Rainfall					Runoff							
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)		Date and time	Rate (in/hr)	Acc. (inches)						
Event of July 25-26, 1962 4/															
	RG R-30		7-25-62	RG R-30			7-25-62								
7-4-62	.60	.0000	2130	.00	.00		2153	.00000	.00000						
7-9	.05	.0000	2135	.36	.03		2215	.00002	.00000						
7-17	.05	.0000	2143	.30	.07		2217	.00002	.00000						
7-18	.84	.0006	2149	2.00	.27		2218	.00176	.00001						
7-24	1.09	.0000	2159	1.14	.46		2219	.00259	.00005						
			2200	1.38	.69		2220	.00283	.00010						
			2300	.21	.90		2222	.00425	.00022						
			2329	.22	1.01		2224	.00526	.00038						
			2400	.12	1.07		2226	.00725	.00059						
			7-26-62												
			0055	.07	1.14		2228	.01118	.00090						
							2230	.01620	.00135						
							2232	.02052	.00196						
							2234	.02934	.00279						
							2236	.05346	.00417						
7-4-62	RG R-47		7-25-62	RG R-47			2238	.07146	.00625						
	.43	.0000	2135	.00	.00		2240	.07290	.00865						
7-9	.03	.0000	2143	1.65	.22		2241	.07380	.00987						
7-18	.26	.0006	2151	.75	.32		2245	.07020	.01467						
2/ 7-25	5/ .08	.0000	2158	2.49	.61		2247	.06966	.01700						
			2206	.97	.74		2250	.05994	.02024						
			2219	.37	.82		2255	.05346	.02496						
			2244	.12	.87		2300	.04284	.02901						
			2314	.06	.90		2305	.03510	.03226						
			2400	.13	1.00		2310	.02808	.03489						
			7-26-62				2320	.02052	.03884						
			0018	.10	1.10		2330	.01688	.04191						
							2340	.01442	.04452						
							2400	.00929	.04847						
							7-26-62								
							0020	.00585	.05097						
							0040	.00407	.05260						
							0100	.00279	.05373						
							0130	.00191	.05485						
							0200	.00156	.05572						
							0300	.00109	.05704						
							0400	.00084	.05800						
							0600	.00051	.05932						
							0800	.00017	.06000						
							1000	.00002	.06016						
							1200	.00000	.06018						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5,556. FOR CONTOUR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 63.1-2. 4/ ISOHYETAL MAP ON P. 63.2-3. 5/ PRIOR TO 2130.															

Cooperative Research Project of USDA and Arizona Agricultural Experiment Station



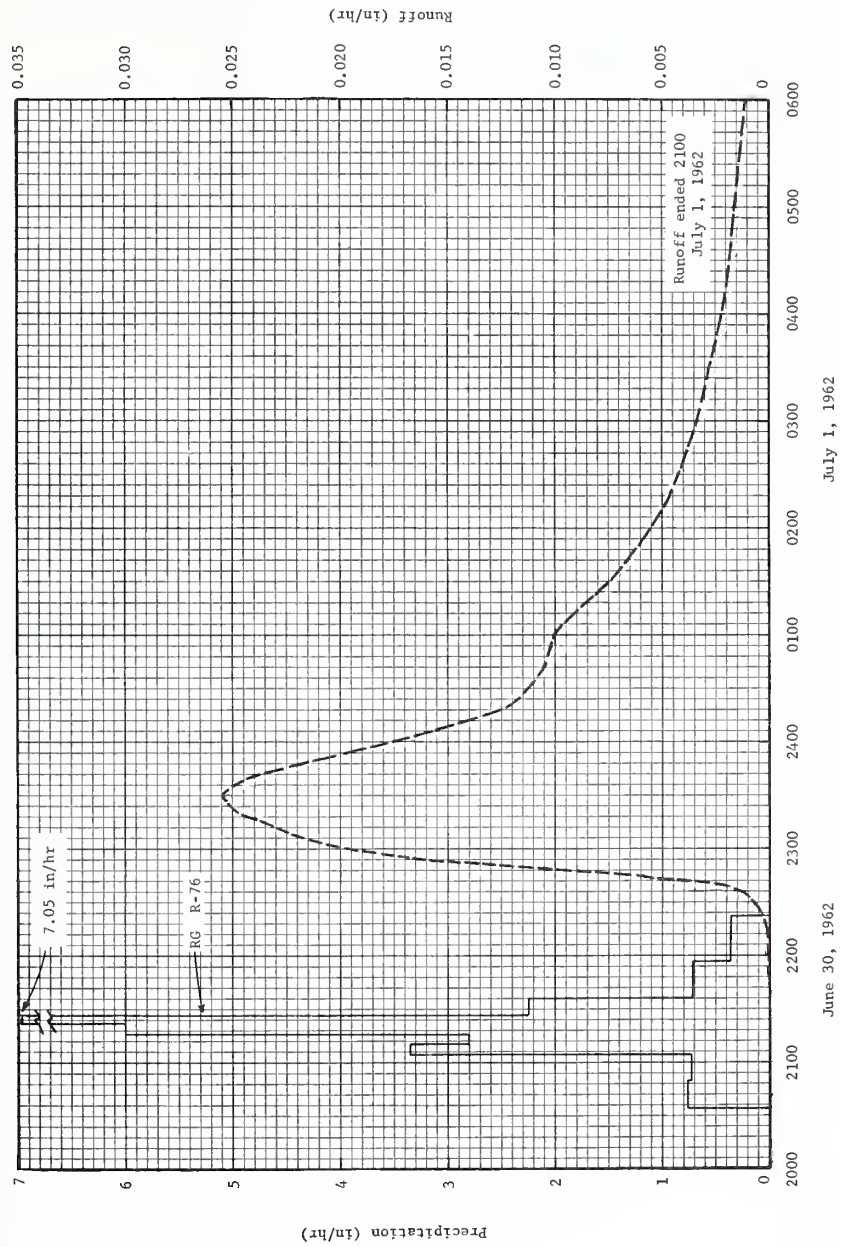
TOMBSTONE, ARIZONA WATERSHED W-5

REVISION OF PREVIOUSLY PUBLISHED DATA

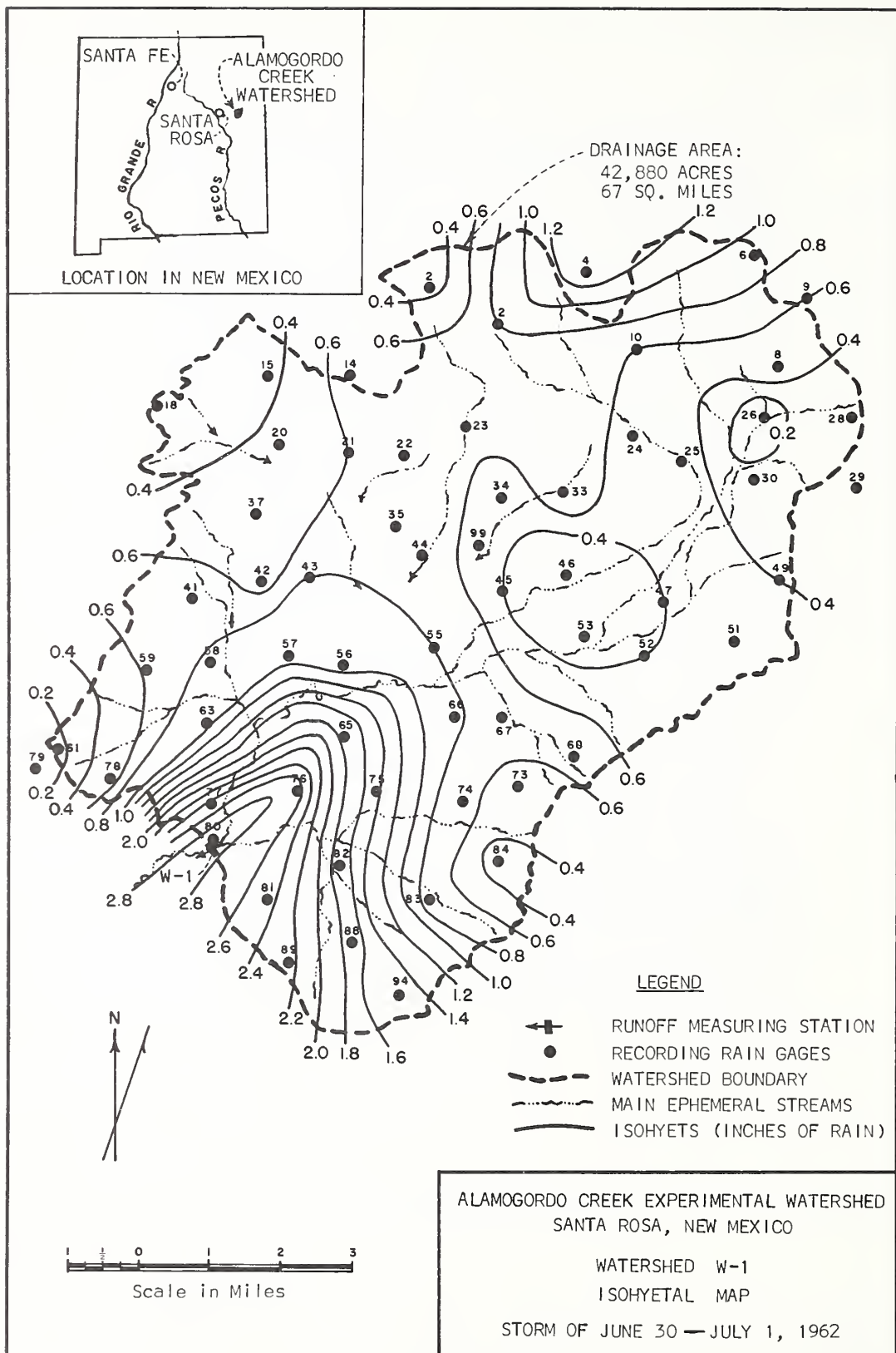


MONTHLY PRECIPITATION AND RUNOFF (Inches)								SANTA ROSA, NEW MEXICO WATERSHED W-1 AREA—42,880 ACRES (67 SQ. MILES)								
Month Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual			
1962 P 1/ Q	.19 .00	.06 .00	.28 .00	.26 .00	.30 .00	1.96 .07	4.73 .07	.33 .13	1.99 T	.34 T	.41 .00	.33 .00	11.18 .27			
STA AV 2/ (56-62) P Q	.24 .00	.15 .00	.54 .00	.42 .00	.85 T	1.56 .24	3.25 .29	1.49 .07	1.09 .02	1.20 T	.18 .00	.62 .00	11.59 .62			
MEAN P 3/ 54 YR	.37	.43	.63	.83	1.77	1.45	2.38	2.48	1.50	1.26	.39	.55	14.04			
ANNUAL MAXIMUM DISCHARGES IN INCHES PER HOUR AND ANNUAL MAXIMUM VOLUMES OF RUNOFF IN INCHES FOR SELECTED TIME INTERVALS								SANTA ROSA, NEW MEXICO WATERSHED W-1								
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 hour		2 hours		6 hours		12 hours		1 day		2 days		8 days		
		Date	Rate	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	Date	Vol.	
1962	7-30	.0311	7-30	.0224	7-30	.0319	7-30	.0920	7-30	.1128	7-30	.1397	7-28	.1484	7-24	.1953
MAXIMUMS FOR PERIOD OF RECORD																
1956 to 1962	6-5 1960	.1718	6-5 1960	.1713	6-5 1960	.3327	6-5 1960	.6975	6-5 1960	.8304	6-5 1960	.9197	6-5 1960	1.08	7-4 1960	1.26
Notes: Quality of records: Monthly P and Q, good; annual maximum discharges and volumes, good. Watershed conditions: Grazing land; 75% grassland, 25% shrubs. 1/ Monthly precipitation is arithmetic average of 55 rain gages. 2/ Precipitation and runoff records began Jan. 1955. Summer runoff incomplete, so 1955 not included in averages. 3/ Mean P based on 54-yr (1908-61) U. S. Weather Bureau record period at Santa Rosa, N. Mex.																
1962 SELECTED RUNOFF EVENT								SANTA ROSA, NEW MEXICO WATERSHED W-1								
Antecedent conditions			Rainfall			Runoff										
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)								
Event of June 30—July 1, 1962 4/																
5-31-62	RG R-26 .07	.0000	6-30-62	RG .00	R-76 .00	6-30-62	.00000	.00000								
6-1	.05	.0000	2035	.76	.19	2149	T	T								
6-12	.10	.0000	2105	.72	.37	2205	.00002	T								
6-25	.10	.0000	2110	3.36	.65	2210	.00007	T								
6-26	.69	.0060	2116	2.80	.93	2215	.00010	.00001								
			2121	6.00	1.43	2220	.00025	.00002								
			2125	7.05	1.90	2225	.00048	.00005								
			2136	2.24	2.31	2230	.00063	.00010								
			2157	.71	2.56	2235	.00108	.00017								
			2222	.36	2.71	2240	.00213	.00030								
						2242	.00418	.00046								
						2245	.00589	.00063								
						2248	.00905	.00100								
						2250	.01109	.00134								
5-31-62	RG R-81 .05	.0000	6-30-62	RG .00	R-81 .00	2252	.01334	.00175								
6-12	.30	.0000	2045	1.37	.16	2255	.01656	.00250								
6-24	.15	.0000	2052	2.47	.49	2300	.01965	.00401								
6-25	.05	.0000	2100	3.70	.86	2305	.02131	.00572								
			2106			2310	.02262	.00755								
6-26	1.32	.0060	2113	4.03	1.33	2315	.02369	.00948								
			2121	3.08	1.74	2320	.02459	.01149								
			2129	4.20	2.30	2330	.02550	.01566								
			2141	.95	2.49	2340	.02406	.01979								
						2350	.02127	.02357								
Watershed conditions: About 75% of area is grassland, vegetation consisting of blue grama, galleta, buffalo and ring muhly. Remaining 25% is pinon, juniper, and various shrubs, with some grasses interspersed.																
						2355	.01942	.02527								
						2400	.01756	.02681								
						7-1-62										
						0005	.01591	.02820								
						0010	.01455	.02947								
						0015	.01327	.03063								
						0020	.01220	.03169								
						0030	.01125	.03364								
						0040	.01060	.03546								
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 43,240. 4/ ISOHYETAL MAP ON P. 64.1-4.																

1962 SELECTED RUNOFF EVENT						SANTA ROSA, NEW MEXICO WATERSHED W-1		
Antecedent conditions			Rainfall			Runoff		
Date	Rainfall (inches)	Runoff (inches)	Date and time	Intensity (in/hr)	Acc. (inches)	Date and time	Rate (in/hr)	Acc. (inches)
Event of June 30—July 1, 1962—Continued						7-1-62		
						0100	.01018	.03892
						0110	.00940	.04055
						0120	.00833	.04203
						0130	.00747	.04335
						0140	.00673	.04453
						0150	.00617	.04560
						0200	.00550	.04657
						0215	.00475	.04785
						0230	.00429	.04898
						0245	.00385	.05000
						0300	.00336	.05090
						0330	.00283	.05245
						0400	.00217	.05370
						0430	.00185	.05470
						0500	.00157	.05555
						0530	.00135	.05628
						0600	.00110	.05689
						0700	.00077	.05782
						0800	.00054	.05847
						0900	.00035	.05891
						1000	.00020	.05918
						1100	.00013	.05934
						1300	.00006	.05952
						1500	.00004	.05962
						1800	.00002	.05974
						2100	.00000	.05980
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 43,240.								



SANTA ROSA, NEW MEXICO WATERSHED W-1



MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA		WATERSHED W-2		57M-2 1/				
								AREA — 115 ACRES						
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P 2/	.27	.26	.33	1.15	6.29	1.75	2.39	1.10	.49	1.31	.40	.23	15.97
	Q	.02	.09	.17	.00	.15	.05	.26	.02	.00	.00	.00	.00	.76
STA AV 3/ P	(58-62)	.16	.21	.22	.81	2.10	2.04	1.70	1.12	1.19	.59	.35	.20	10.69
	Q	.00	.03	.19	.00	.03	.04	.07	.01	.02	.00	.00	.00	.39
MEAN P 4/														
55 YR		.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49
Notes: Quality of records: P, good; Q Jan.—Apr., fair; May—Dec., good. Watershed conditions: 100% rangeland. Condition classes: Excellent, 19%; good, 64%; fair, 17%. Degree of grazing: Full. Estimated production of cover: 1,770 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/ Local watershed code number. 2/ Monthly precipitation obtained from rain gage W-2A. 3/ Precipitation and runoff records began Jan. 1958. 4/ Mean P based on 55-yr. (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.														

1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA		WATERSHED W-2		57M-2			
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1													
2													
3			.02				.90	.06			.02	.07	
4						.21					.02		
5								.72		.42	.03		
6	.10					.23				.79	.17		
7				.20						.06			
8	.02								.19				
9													
10			.09	.03								.06	
11			.01										
12		.08	.03	.10		.03	.14						
13		.02	.04	.02		.04							
14						.14	.46						
15					1.20	.12					.05		
16							.73						
17		.01			.52								
18	.01	.02			1.36								
19	.04	.03								.04		.10	
20	.06	.06			.30	.02							
21	.03	.04			.37	.67							
22	.01				.70	.04		.10					
23											.11		
24			.14		.35	.25							
25				.60	.35								
26				.10	.10		.06						
27				.08	.14		.10						
28				.02	.39								
29					.51			.20	.10				
30								.02	.20				
31													
TOTAL	.27	.26	.33	1.15	6.29	1.75	2.39	1.10	.49	1.31	.40	.23	
STA AV	.16	.21	.22	.81	2.10	2.04	1.70	1.12	1.19	.59	.35	.20	
NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-2A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.2-4.													

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-2 57M-2						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1		.03										
2		.03										
3		.02					.12					
4		.01						.02				
5												
6						T				T		
7												
8												
9												
10												
11												
12							.01					
13												
14												
15												
16							.13					
17												
18			T			.05						
19			.03									
20			.06									
21			.07			.03	.05					
22			.01			.03						
23			T									
24			T			T						
25			T			.01						
26			T									
27						T						
28												
29						.03						
30												
31	.02											
MEAN												
INCHES	.02	.09	.17			.15	.05	.26	.02	T		
NOTES: DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-5 AREA—46 ACRES 57M-5 1/							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P ^{2/}	.32	.25	.32	1.15	7.11	3.86	2.78	.26	.45	.81	.18	.13	17.62
Q	.00	.04	.07	.00	.34	.30	.08	.00	.00	.00	.00	.00	.83
STA AV ^{3/} P	.17	.25	.33	.86	2.40	2.56	1.59	1.02	.92	.39	.20	.26	10.95
(58-62) Q	.00	.01	.13	.01	.07	.09	.06	.01	.00	.00	.00	.00	.38
MEAN P ^{4/} 55 YR	.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49
Notes: Quality of records: P, good; Q, fair. Watershed conditions: 100% rangeland. Condition classes: Excellent, 7%; good, 93%. Degree of grazing: Full. Estimated production of cover: 2,400 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/Local watershed code number. 2/ Precipitation obtained from rain gage W-5A. 3/ Precipitation and runoff records began Jan. 1958. 4/ Mean P based on 55-yr (1908-62) U.S. Weather Bureau record period at Newell, S. Dak.													
1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-5 57M-5							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1				.01				.05			.02		
2													
3			.03				.67					.03	
4						.48							
5						.13				.10			
6	.10					.03	.05			.55			
7				.25	.03					.07			
8									.07	.07			
9							.13		.08				
10			.08	.09								.05	
11			.09	.07									
12		.08	.02	.03		.11	.13						
13		.02	.02		.04	.07	.07						
14	.04				.80	.65	.50						
15	.03				.25	.52	.13				.02		
16		.04			.01		.28				.01		
17					.29								
18	.01				1.07	.06	.05						
19	.04				.23	.03	.03			.03		.08	
20	.01	.02			.50	.09					.07		
21	.08	.04			1.00	.80				.02	.03		
22	.01	.02			.41	.74		.11		.04			
23			.03										
24		.03			.34								
25				.03	.38								
26				.55	.22		.25						
27				.06	.12		.07						
28			.05	.06	.92		.25						
29					.50		.04		.14				
30							.13	.10	.16				
31						.18							
TOTAL	.32	.25	.32	1.15	7.11	3.86	2.78	.26	.45	.81	.18	.13	
STA AV	.17	.25	.33	.86	2.40	2.56	1.59	1.02	.92	.39	.20	.26	
NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW. ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-5A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.5-4.													

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-5						57M-5
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2												
3							.08					
4												
5												
6												
7												
8												
9		.04	.07									
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21					.17							
22						.30						
23												
24												
25												
26												
27												
28					.12							
29					.05							
30		-----										
31		-----										
MEAN												
INCHES		.04	.07			.34	.30	.08				
NOTES:												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA		WATERSHED W-7		57M-7 1/				
						AREA—160 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P 2/	.32	.28	.33	1.15	6.84	3.10	2.85	.32	.44	.73	.18	.13	16.67
	Q	.00	.02	.17	.00	.16	.52	.13	.00	.00	.00	.00	.00	1.00
STA AV 3/ P		.20	.30	.39	.91	2.43	2.72	1.66	1.15	1.00	.44	.29	.28	11.77
(58-62) Q		.00	.00	.15	.00	.03	.11	.07	.01	.00	.00	.00	.00	.37
MEAN P 4/														
55 YR		.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49
Notes: Quality of records: P, good; Q Jan.—Apr., fair; May—Dec., good. Watershed conditions: 100% rangeland. Condition classes: Good, 82%; fair, 18%. Degree of grazing: Full. Estimated production of cover: 2,600 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/ Local watershed code number. 2/ Precipitation obtained from rain gage W-7A. 3/ Precipitation and runoff records began Jan. 1958. 4/ Mean P based on 55-yr. (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.														
1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA		WATERSHED W-7		57M-7				
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1				.01								.02		
2												.03		
3			.03				.82	.08						
4						.42								
5						.13					.10			
6	.10					.03	.05				.50			
7				.25	.03						.04			
8									.05					
9							.20		.06					
10			.08	.09									.05	
11			.09	.07										
12		.08	.02	.03		.11	.13							
13		.02	.02		.04	.07	.07							
14	.04				.80	.79	.50							
15	.03				.25	.27	.06					.02		
16		.04			.01	.01	.28					.01		
17		.03			.29									
18	.01				1.07	.06	.05							
19	.04				.23		.03							
20	.01	.02			.50	.10				.03		.07	.08	
21	.08	.04			.96	.11						.03		
22	.01	.02			.34	.90		.15		.02				
23			.04							.04				
24		.03			.30									
25				.03	.40									
26				.55	.20		.25							
27				.06	.12		.05							
28				.06	.90		.18							
29			.05		.40		.04							
30						.10	.13		.09	.14				
31							.01			.19				
TOTAL		.32	.28	.33	1.15	6.84	3.10	2.85	.32	.44	.73	.18	.13	
STA AV		.20	.30	.39	.91	2.43	2.72	1.66	1.15	1.00	.44	.29	.28	
NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-7A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED, 1956-59, USDA MISC. PUB. 945, P. 65.7-4.														

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-7						57M-7
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2												
3												
4						.03	.13					
5												
6												
7												
8												
9		.02	.02									
10												
11												
12												
13												
14												
15						.12						
16												
17												
18												
19												
20												
21					.01							
22						.37						
23			.10									
24			.03									
25			.02									
26			T									
27												
28					.15							
29												
30												
31												
MEAN												
INCHES		.02	.17		.16	.52	.13					
NOTES:												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA			WATERSHED W-12			57F-12 1/		
						AREA — 90 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P2/	.35	.31	.37	1.03	8.63	4.74	3.95	1.06	.58	1.09	.41	.08	22.60
	Q	.00	.00	.51	.00	3.59	1.28	.74	.00	.00	.00	.00	.00	6.12
	STA AV3/ P	.20	.23	.43	.93	2.77	3.23	1.67	.93	.93	.42	.31	.21	12.26
	(58-62) Q	.00	.03	.41	.14	.84	.68	.19	.11	.01	.00	.01	.01	2.43
	MEAN P 4/													
	55 YR	.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49
Notes: Quality of records: P, good; Q, fair. Watershed conditions: 100% rangeland. Condition classes: Good, 94%; fair, 6%. Degree of grazing: Close. Estimated production of cover: 1,000 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/ Local watershed code number. 2/ Precipitation obtained from rain gage W-12A. 3/ Precipitation and runoff records began Jan. 1958. 4/ Mean P based on 55-yr. (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.														

1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA			WATERSHED W-12			57F-12	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1													.01
2													.05
3													.06
4													.02
5						.65	.70	.14					
6						.20							
7	.10												
8					.12	.23							
9													
10				.08	.03	.07	.28		.08				
11				.06			.03	.30	.10				
12													
13		.10	.01	.10		.10	.50						
14		.07	.02	.09		.08	.45						
15	.04					1.82	.82						.02
16	.02				.80	.95	.01						.02
17		.04				.23	.56						
18		.04			.70								.03
19	.03				2.05								
20	.02				.08		.17			.03			
21	.11	.02			.24								.05
22													
23	.02	.04			1.47	.04				.03	.06		
24	.01				.23			.22		.02			
25			.07		.33	.40							
26				.03	.80								
27				.50	.20		.15						
28				.12	.12		.09						
29			.06	.58									
30				.40				.15	.05				
31						.20		.25	.35				
TOTAL	.35	.31	.37	1.03	8.63	4.74	3.95	1.06	.58	1.09	.41	.08	
STA AV	.20	.23	.43	.93	2.77	3.23	1.67	.93	.93	.42	.31	.21	
NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-12A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.12-4.													

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-12						57F-12
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2							.07					
3												
4						.16						
5												
6												
7												
8												
9												
10												
11							.03					
12												
13					T	.75	.59					
14					.03	.26						
15												
16						.11	.05					
17					.17							
18			.21		1.64							
19												
20			.11									
21					.89							
22			.19		.13							
23												
24												
25					.40							
26					.08							
27												
28					.10							
29					.15							
30		-----							-----		-----	
31		-----		-----								
MEAN			.51		3.59	1.28	.74					
INCHES												
NOTES:	SPILLWAY FLOW: MAY, JUNE, JULY.											

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-13 57F-13 ^{1/}							
						AREA — 160 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962 P ^{2/}	.25	.25	.36	.76	7.29	3.27	1.94	.74	.35	.73	.33	.25	16.52
Q	.00	.00	.09	.03	1.48	.90	.00	.00	.00	.00	.00	.00	2.50
STA AV ^{3/} P	.20	.25	.31	.80	2.63	2.85	1.09	.66	.78	.48	.33	.27	10.65
(58-62) Q	.00	.01	.22	.02	.30	.44	.00	.00	.00	.00	.00	.00	.99
MEAN P ^{4/}													
55 YR	.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49
Notes: Quality of records: P, fair; Q, fair. Watershed conditions: 100% rangeland. Condition classes: Excellent, 8%; good, 67%; fair, 25%. Degree of grazing: Full. Estimated production of cover: 1,700 lb/ac of oven dry material (production based on 1961 and 1963 data). ^{1/} Local watershed code number. ^{2/} Thiessen weighted precipitation obtained from rain gages W-13B and W-13C. ^{3/} Precipitation and runoff records began Jan. 1958. ^{4/} Mean P based on 55-yr. (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.													
1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-13 57F-13							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1													
2													
3			.03					.15				.07	
4							.43					.05	
5						.25							
6	.10					.04				.02		.12	
7				.20						.65			
8									.05	.06			
9			.02										
10			.08	.07	.16			.10					.10
11			.02	.08	.16								
12		.08	.08	.04	.02	.03	.18						
13		.05	.02		.80	.12	.18						
14	.01				.21	1.45	.18						
15	.01					.64							
16		.02			.39	.17	.22						
17		.02			.39								
18	.07				.30								
19	.02					.02	.28				.09	.15	
20	.02	.02			.67	.12							
21	.01	.04			1.28								
22	.01				.19			.20					
23			.08										
24			.03		.35	.37							
25					.51								
26		.02			.19		.05						
27				.21	.02		.48						
28				.16	1.12								
29					.53	.18		.04	.03				
30								.25	.27				
31													
TOTAL	.25	.25	.36	.76	7.29	3.27	1.94	.74	.35	.73	.33	.25	
STA AV	.20	.25	.31	.80	2.63	2.85	1.09	.66	.78	.48	.33	.27	
NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. THIESSEN WEIGHTED PRECIPITATION OBTAINED FROM RAIN GAGES W-13B AND W-13C. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.13-4.													

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-13				57F-13		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2												
3				.03								
4												
5												
6												
7												
8												
9		T										
10												
11												
12												
13						.78						
14												
15						.11						
16												
17												
18												
19												
20												
21					.50							
22					T							
23			.09			.01						
24												
25					.06							
26					.12							
27					.80							
28												
29												
30		-----		-----		-----			-----		-----	
31												
MEAN												
INCHES		T	.09	.03	1.48	.90						
NOTES:												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-14 AREA—35 ACRES							57F-14 ^{1/}
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1959 P	.24	.12	.15	.74	2.36	1.43	.89	.23	2.02	.45	.66	.13	9.42
Q2/	.00	.092	.142	.055	.036	.017	.016	.00	.018	.00	.069	.008	.45
1962 P3/	.24	.36	.91	1.03	7.88	3.98	2.49	.63	.40	.90	.41	.16	19.39
Q	.00	.00	.42	.00	1.26	.55	.09	.00	.01	.01	.00	.00	2.34
STA AV ^{4/} P	.23	.21	.40	1.14	2.78	3.05	2.28	.87	.87	.52	.41	.27	13.03
(58-62) Q	.00	.05	.24	.04	.26	.51	.29	.04	.01	.00	.02	.00	1.46
MEAN P 5/ 55 YR	.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49

Notes: Quality of records: P, fair; Q, good except May and June, fair. Watershed conditions: 100% rangeland. Condition classes: Good, 54%, fair, 46%. Degree of grazing: Full. Estimated production of cover: 1,400 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/ Local watershed code number. 2/ Previously published runoff totals for April and May revised and correct values underlined. 3/ Precipitation obtained from rain gage W-14A. 4/ Precipitation and runoff records began Jan. 1958. 5/ Mean P based on 55-yr (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.

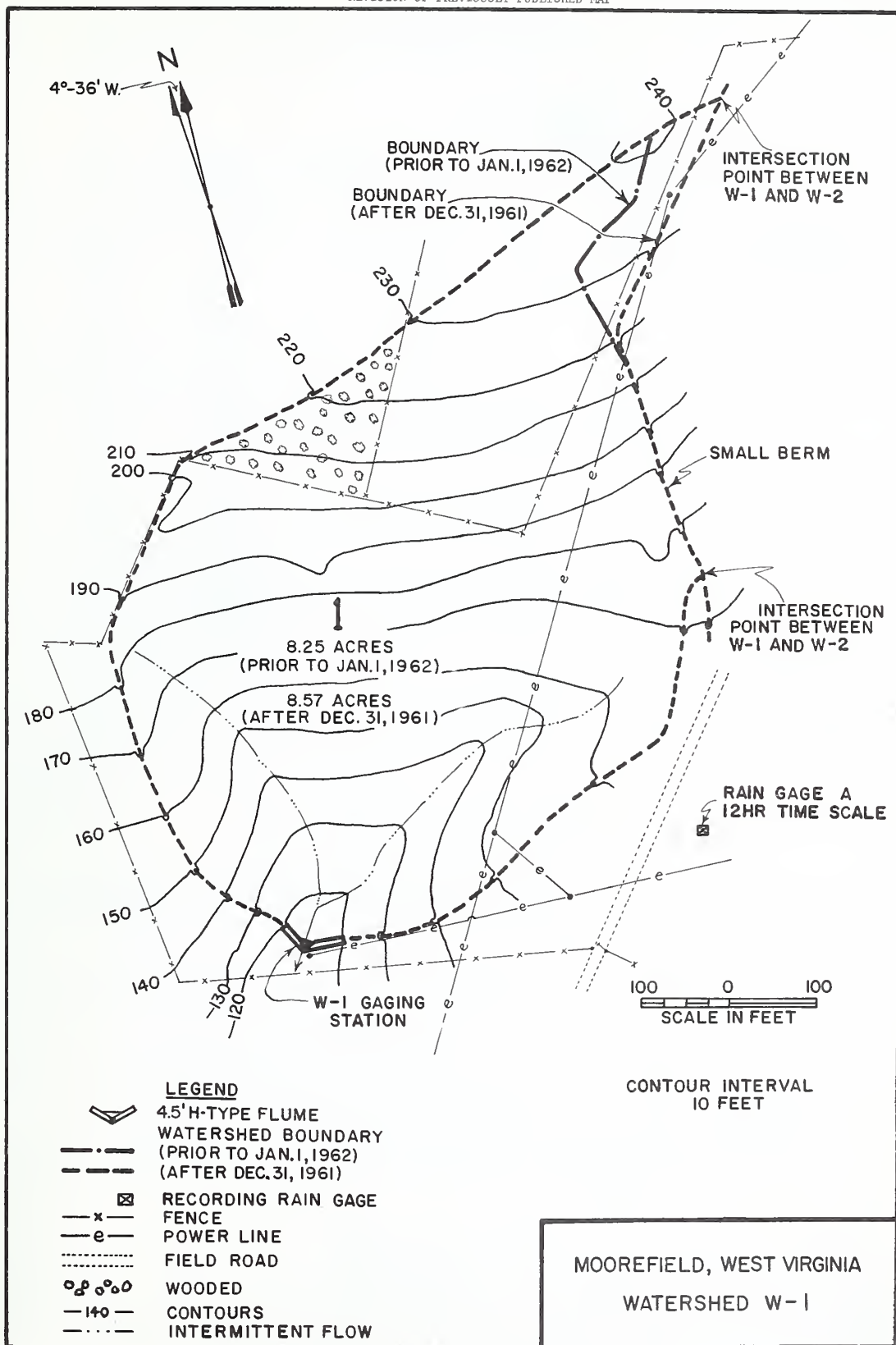
1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-14							57F-14
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1							.01						
2								.08			.10		
3			.03				.20						
4						.25					.02		
5						.13				.03			
6	.08					.08				.77	.10		
7				.20		.06				.10			
8													
9			.03										
10			.10	.03								.06	
11			.14	.12									
12		.01	.26	.02	.15	.05							
13		.08	.16		.05		.15						
14	.04		.10		.88	1.68	.40				.02		
15	.02				.22	.77					.02		
16		.08											
17		.05			.62		1.50				.03		
18	.01	.03			1.28								
19	.03				.03		.01				.07	.10	
20	.03	.06			.12						.05		
21	.02	.01			1.20	.10							
22	.01	.04				.10		.25					
23													
24			.02		1.65	.67							
25			.04		.30								
26				.40	.30		.07						
27				.08	.30								
28				.06	.34								
29			.03	.12	.44			.05					
30						.09		.25	.40				
31							.15						
TOTAL	.24	.36	.91	1.03	7.88	3.98	2.49	.63	.40	.90	.41	.16	
STA AV	.23	.21	.40	1.14	2.78	3.05	2.28	.87	.87	.52	.41	.27	

NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-14A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.14-4.

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-14							57F-14
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1													
2													
3													
4													
5													
6										.01			
7													
8													
9													
10													
11													
12													
13						.42							
14													
15													
16													
17					.02		.09						
18					.26								
19			T										
20			.03										
21			.20										
22					.26								
23			.06										
24			.03										
25			.08			.13							
26			.02		.31								
27													
28					.29								
29					.12								
30		-----											
31		-----		-----		-----			.01		-----		
MEAN													
INCHES			.42		1.26	.55	.09		.01	.01			
NOTES: SPILLWAY FLOW: MAY, JUNE, JULY.													

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA			WATERSHED W-15			57F-15 1/		
									AREA—115 ACRES					
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P 2/	.24	.36	.91	1.03	8.64	4.38	2.59	.65	.40	.90	.41	.16	20.67
	Q	.00	.00	.15	.00	1.56	.66	.15	.00	.01	T	.00	.00	2.53
STA AV 3/	P	.36	.22	.41	1.25	2.99	3.14	2.49	.91	.89	.58	.49	.30	14.03
(58-62)	Q	.00	.01	.13	.09	.32	.45	.33	.02	.01	.00	.01	.00	1.37
MEAN P 4/	55 YR	.43	.37	.76	1.63	2.69	2.95	2.11	1.35	1.28	1.01	.53	.38	15.49
Notes: Quality of records: P, fair; Q Jan.—July, fair; Aug.—Dec., good. Watershed conditions: 100% rangeland. Condition classes: Good, 41%, fair, 59%. Degree of grazing: Full. Estimated production of cover: 1,300 lb/ac of oven dry material (production based on 1961 and 1963 data). 1/ Local watershed code number. 2/ Precipitation obtained from rain gage W-15A. 3/ Precipitation and runoff records began Jan. 1958. 4/ Mean P based on 55-yr (1908-62) U. S. Weather Bureau record period at Newell, S. Dak.														
MONTHLY RUNOFF 1958: (Revision) July monthly total Q should be 1.242 in., not 1.240. Rounded annual total of 2.29 in. is unchanged.														
DAILY PRECIPITATION 1960: (Revision) Delete .45 in. of precipitation on August 23, 1960. Monthly and annual totals remain the same.														
1962 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA			WATERSHED W-15			57F-15		
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1							.01							
2								.10				.10		
3			.03				.20							
4						.20						.02		
5						.13				.03				
6	.08					.03				.77	.10		.06	
7				.20		.06				.10				
8														
9			.03											
10			.10	.03										
11			.14	.12										
12		.01	.26	.02	.17	.04	.07							
13		.08	.16		.06		.08							
14	.04		.10		.87	1.78	.65					.02		
15	.02				.27	.80						.02		
16		.08												
17		.05			.71		1.35					.03		
18	.01	.03			1.33									
19	.03				.03		.01					.07	.10	
20	.03	.06			.12							.05		
21	.02	.01			1.43	.30								
22	.01	.04				.12		.25						
23														
24			.02		1.75	.83								
25			.04		.40									
26				.40	.37		.07							
27				.08	.39									
28				.06	.37									
29			.03	.12	.37			.04						
30						.09		.26	.40					
31							.15							
TOTAL	.24	.36	.91	1.03	8.64	4.38	2.59	.65	.40	.90	.41	.16		
STA AV	.36	.22	.41	1.25	2.99	3.14	2.49	.91	.89	.58	.49	.30		
NOTES: ALL PRECIPITATION FROM JAN. 1 TO APR. 15 AND NOV. 20 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-15A. STA AV IS BASED ON PERIOD 1958-62. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.15-4.														

1962 MEAN DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-15						57F-15
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2												
3												
4												
5												
6												
7										T		
8												
9												
10												
11												
12												
13												
14					T	.38						
15						.10						
16							.15					
17					.06							
18												
19					.30							
20												
21												
22			.15		.48							
23												
24					.03	.18						
25					.32							
26												
27					.03							
28					.26							
29					.08							
30									.01			
31												
MEAN												
INCHES			.15		1.56	.66	.15		.01	T		
NOTES: SPILLWAY FLOW: MAY, JUNE, JULY.												



Revised 1-1-62

MOOREFIELD, WEST VIRGINIA WATERSHED W-1

LOCATION: Hardy County, W. Va.; approximately 5 miles southwest of Moorefield; South Branch Potomac River Basin.

AREA: (Revision) 8.57 acres (8.25 acres prior to 1-1-62)

SLOPES:	Slope—Percent	0-3	3-10	10-20	20-30
	Percent of area	0	8	62	30

SOILS: (Revision) Residual, derived from gray siltstones with some interbedding of calcareous shales.

Type	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme-ability	Structure	Perme-ability	Avg. depth to(in.)	Perme-ability	
Litz shaly silt loam	90	4	Weak fine granular	Rapid	-----	-----	4	Rapid	Medium
Undifferentiated alluvium	6	8	Strong, fine subangular blocky	Moderate	-----	-----	8	Slow	Slow
Litz shaly silt loam (moderately deep phase)	3	2	Weak fine granular	Rapid	Fine subangular blocky	Moderate	8	Moderate	Medium
Litz silt loam	1	3	Moderate fine granular	Moderate	Weak to moderate medium subangular, blocky	Moderate	17	Moderate	Medium

Depth to shale (in)	0-12	12-18	18-24	24-30	> 30
Percent of area	24	28	14	10	24

EROSION: (Revision)	Erosion class	1	2	3	4
	Percent of area	4	3	91	2

LAND CAPABILITY: (Revision)	Class	I	II	III	IV	V	VI	VII
	Percent of area	0	6	4	88	0	0	2

GEOLOGY: Marcellus shale of Devonian age predominates with a small cap of the younger Hamilton formation present in the northwest corner of the area. Depths to bedrock range from 10 in. to 60+ in. Structurally, the area is composed of several small anticlines and synclines with the axial planes striking N30°E. The exit channels are located in the troughs, and one- to three-foot-diameter concretions top the anticlines. The Hamilton cap has a similar strike, and both formations have a constant dip of 22°SE. Source of data: W. B. Ferguson, Geologist, SCS.

SURFACE DRAINAGE: Good; length of principal waterway, approximately 1000 ft.; a natural watershed with surface flow to two well defined waterways which intersect 30 ft. above the gaging station.

CHARACTER OF FLOW: Spring-fed, intermittent flow, continuous.

INSTRUMENTATION: (Revision) Runoff: N-4.5 precalibrated flume equipped with FW-1 recorder, with 12-hr. time scale. Precipitation: recording rain gage with 12-hr. time scale.

WATERSHED CONDITIONS: (Revision) Permanent pasture with controlled grazing. The predominant species are native perennial lespedeza, Canada and Kentucky bluegrass, povertygrass, and buckhorn plantain. Agricultural lime and phosphate (0-20-0) applied at the rate of 2 tons and 800 pounds per acre, respectively. Vegetative cover estimates for period of record are:

Year	1958	1959	1960	1961	1962
Percent bare space	25-30	20-50	10-50	0-10	20-45

GENERALLY REPRESENTS: Pasture practices on shallow shale soil typical of large areas in eastern West Virginia, central Pennsylvania, western Maryland and parts of Virginia and Tennessee. Applicable to similar lands in the land resource areas of the Southern Appalachian Ridges and Valleys (N-128) and the Northern Appalachian Ridges and Valleys (S-147).

MONTHLY PRECIPITATION AND RUNOFF (inches)						MOOREFIELD, WEST VIRGINIA WATERSHED W-1								66.01		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P1/	1.42	3.47	3.87	2.33	5.59	2.60	3.06	1.09	2.43	3.06	2.96	2.12	34.00		
		.15	.93	2.92	.29	.18	.05	T	.00	.00	T	.14	.03	4.69		
STA AV2/P		1.49	2.62	2.47	2.69	3.69	2.93	3.17	2.43	2.66	1.97	1.43	1.91	29.46		
(58-62) Q		.08	.84	1.02	.45	.34	.10	.01	.10	.02	.02	.03	.03	3.04		
MEAN P 3/		2.21	2.05	2.74	2.73	3.43	3.76	3.58	3.36	2.51	2.41	1.74	1.99	32.51		
67 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	5-23	.09	3-12	.08	3-12	.16	3-12	.40	3-12	.59	3-12	.87	3-12	1.35	3-11	1.87
MAXIMUMS FOR PERIOD OF RECORD																
1958 to 1962	8-3 1958	.44	8-3 1958	.17	8-3 1958	.19	3-12 1962	.40	3-12 1962	.59	3-12 1962	.87	3-12 1962	1.35	3-11 1962	1.87

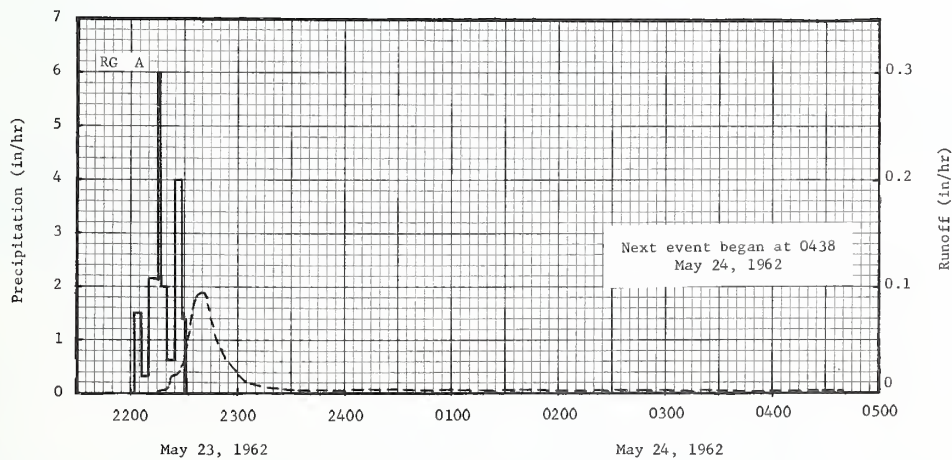
Notes: Quality of records: Monthly P and Q, excellent. Watershed conditions: 100% permanent pasture with controlled grazing. 1/Precipitation data obtained from rain gage A. 2/Precipitation records began Apr. 1958. Runoff records began June 1958. 3/Mean P based on 67-yr (1896-1962) U.S. Weather Bureau record period at or near Moorefield, W. Va. No records for 7 months each in 1915 and 1922 or for Mar. through June 1933. Missing records from July 1933 through Sept. 1940, Feb. through May 1948, and full years 1959-62 supplied from Moorefield McNeill station, 9 miles NNE of Moorefield, W. Va.

Cooperative Research Project of USDA, Potomac Valley Soil Conservation District,
and West Virginia Agricultural Experiment Station

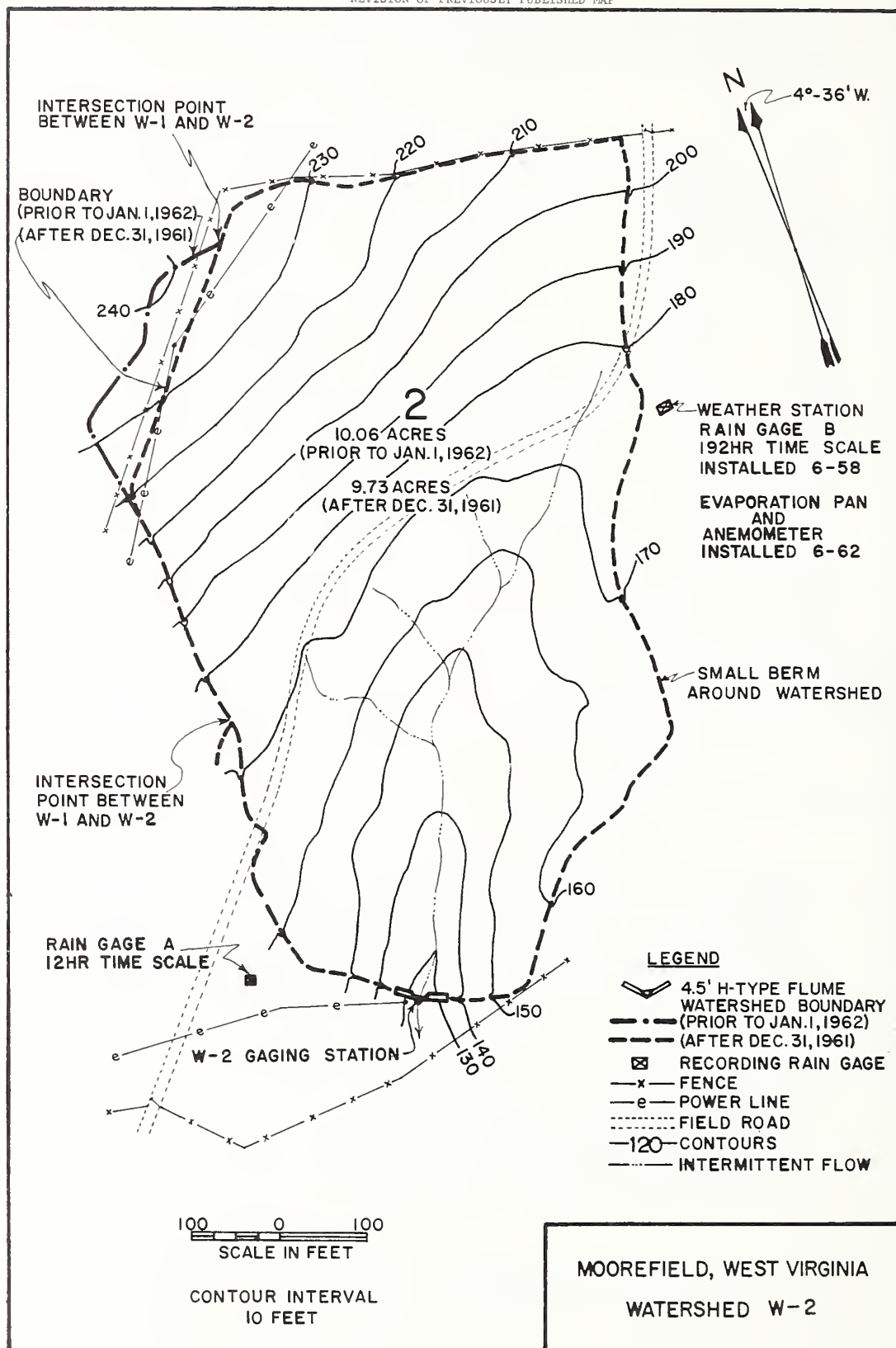
1962 SELECTED RUNOFF EVENT			MOOREFIELD, WEST VIRGINIA				WATERSHED W-1				66.01
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of May 23 and 24, 1962											
	RG A			RG	A						
4-23	.00	1/.0027	5-23	2202	.00	.00	5-23	2215	.0001	.0000	
4-24	.00	.0058		2206	1.50	.10		2220	.0024	.0001	
4-25	.00	.0058		2210	.30	.12		2223	.0150	.0006	
4-26	.00	.0029		2215	2.16	.30		2224	.0164	.0008	
4-27	.00	.0029		2217	6.00	.50		2227	.0179	.0017	
4-28	.00	.0029		2220	2.00	.60		2237	.0908	.0107	
4-29	.33	.0045		2225	.60	.65		2240	.0944	.0154	
4-30	.08	.0058		2228	4.00	.85		2242	.0944	.0185	
5-1	1.01	.0143		2231	1.40	.92		2252	.0405	.0297	
5-2	.39	.0109						2300	.0179	.0336	
5-3	.00	.0084						2310	.0068	.0357	
5-4	.00	.0058						2320	.0031	.0365	
5-5	.00	.0029						2400	.0008	.0378	
5-6	.00	.0029									
5-7	.00	.0029					5-24	0030	2/.0004	.0381	
5-8	.30	.0043						0438	2/.0001	.0391	
5-9	.00	.0031									
5-10	.00	.0029									
5-11	.00	.0029									
5-12	.04	.0029									
5-13	.36	.0040									
5-14	.00	.0029									
5-15	.00	.0016									
5-16	.20	.0020									
5-17	.00	.0008									
5-18	.00	.0001									
5-19	.19	.0013									
5-20	.00	.0001									
5-23	3/.43	4/.0007									

Watershed conditions: Mixed grass cover. 55% to 80% of area covered. Average height, 3 in. to 5 in.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.6414. 1/ RUNOFF FROM 2215 TO 2400. 2/ BEGINNING OF NEXT RUNOFF EVENT. 3/ RAINFALL FROM 1650 to 1720. 4/ RUNOFF FROM 0001 TO 2215.



MOOREFIELD, WEST VIRGINIA WATERSHED W-1



Revised 1-1-62

MOOREFIELD, WEST VIRGINIA WATERSHED W-2

LOCATION: Hardy County, W. Va.; approximately 5 miles southwest of Moorefield; South Branch Potomac River Basin.**AREA:** (Revision) 9.73 acres (10.06 acres prior to 1-1-62)

SLOPES:	Slope-Percent	0-3	3-10	10-20	20-30	30-40
	Percent of area	0	17	62	20	1

SOILS: (Revision) Residual, derived from gray siltstones with some interbedding of calcareous shales.

Type	Percent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Litz shaly silt loam	83	4	Weak, fine granular	Rapid	-----	-----	4	Rapid	Medium
Undifferentiated alluvium	8	8	Strong, fine sub-angular blocky	Moderate	-----	-----	8	Slow	Slow
Clarksburg silt loam	7	6	Weak medium granular	Slow	Moderate, fine, sub-angular (upper B); strong, fine, blocky (lower B)	Slow	20	Slow	Slow
Litz silt loam (moderately well-drained phase)	2	4	Weak fine granular	Moderate	Medium to fine, sub-angular blocky	Slow	12	Slow	Slow

Depth to shale (in.)	0-12	12-18	18-24	24-30	> 30
Percent of area	2	8	20	24	46

EROSION:	Erosion class	1	2	3	4
	Percent of area	8	0	89	3

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII
	Percent of area	0	6	15	77	0	0	2

GEOLOGY: Marcellus shale of Devonian age predominates. Depths to bedrock range from 6 in. to 60+ in. Structurally, the area is composed of several small anticlines and synclines with the axial planes striking N30°E. The exit channels are located in the troughs, and one- to three-foot-diameter concretions top the anticlines. Source of data: W. B. Ferguson, Geologist, SCS.

SURFACE DRAINAGE: (Revision) Good; length of principal waterway, 700 ft.; a natural watershed with surface flow into a well defined waterway.

CHARACTER OF FLOW: Spring-fed, intermittent flow, continuous.

INSTRUMENTATION: (Revision) Runoff: H-4.5 precalibrated flume equipped with FW-1 recorder, with 12-hr. time scale. Precipitation: recording rain gage with 12-hr. time scale.

WATERSHED CONDITIONS: (Revision) Permanent pasture with controlled grazing. The predominant species are Canada and Kentucky bluegrass, cheat, povertygrass, sheep sorrel and buckhorn plantain. Agricultural lime and phosphate (0-20-0) applied at the rate of 2 tons and 800 pounds per acre, respectively. Vegetative cover estimates for period of record are:

Year	1958	1959	1960	1961	1962
Percent bare space	30-40	2-30	20-50	5-15	10-35

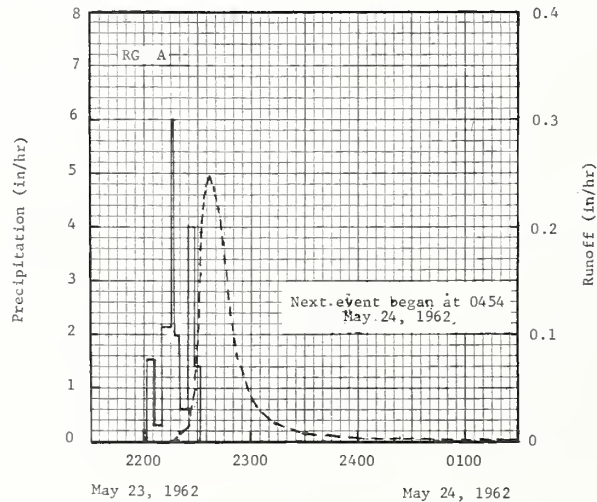
GENERALLY REPRESENTS: Pasture practices on shallow shale soil typical of large areas in eastern West Virginia, central Pennsylvania, western Maryland and parts of Virginia and Tennessee. Applicable to similar lands in the land resource areas of the Southern Appalachian Ridges and Valleys (N-128) and the Northern Appalachian Ridges and Valleys (S-147).

MONTHLY PRECIPITATION AND RUNOFF (inches)							MOOREFIELD, WEST VIRGINIA				WATERSHED W-2			66.02		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P 1/ Q	1.42 .19	3.47 1.19	3.87 2.79	2.33 .30	5.59 .30	2.60 .03	3.06 T	1.09 .00	2.43 .00	3.06 .02	2.96 .25	2.12 .02	34.00 5.09		
STA AV 2/P (58-62) Q		1.49 .19	2.62 .96	2.47 .99	2.69 .53	3.69 .43	2.93 .13	3.17 .07	2.43 .18	2.66 .06	1.97 .06	1.43 .05	1.91 .09	29.46 3.74		
MEAN P 3/ 67 YR		2.21	2.05	2.74	2.73	3.43	3.76	3.58	3.36	2.51	2.41	1.74	1.99	32.51		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	5-23	.25	2-26	.11	2-26	.18	3-12	.43	3-12	.63	3-12	.89	3-11	1.44	3-11	1.94
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1962	8-3 1958	.76	8-2 1958	.36	8-3 1958	.38	5-8 1960	.48	3-12 1962	.63	3-12 1962	.89	3-12 1962	1.44	3-11 1962	1.94
Notes: Quality of records: Monthly P and Q, excellent. Watershed conditions: 100% permanent pasture with controlled grazing. 1/Precipitation data obtained from rain gage A. 2/Precipitation records began Apr. 1958. Runoff records began June 1958. 3/Mean P based on 67-yr (1896-1962) U.S. Weather Bureau record period at or near Moorefield, W. Va. No records for 7 months each in 1915 and 1922 or for Mar. through June 1933, Missing records from July 1933 through Sept. 1940, Feb. through May 1948, and full years 1959-62 supplied from Moorefield McNeill station, 9 miles NNE of Moorefield, W. Va.																

1962			SELECTED RUNOFF EVENT				MOOREFIELD, WEST VIRGINIA				WATERSHED W-2		66.02	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)				
Event of May 23 and 24, 1962														
	RG A			RG	A									
4-23	.00	1/.0022	5-23	2202	.00	.00	5-23	2212	.0000	.0000				
4-24	.00	.0024		2206	1.50	.10		2216	.0003	.0003			T	
4-25	.00	.0024		2210	.30	.12		2220	.0088	.0003				
4-26	.00	.0024		2215	2.16	.30		2225	.0145	.0013				
4-27	.00	.0012		2217	6.00	.50		2228	.0485	.0029				
4-29	.33	.0011		2220	2.00	.60		2229	.0743	.0039				
4-30	.08	.0027		2225	.60	.65		2231	.1355	.0074				
5-1	1.01	.0509		2228	4.00	.85		2233	.1977	.0129				
5-2	.39	.0314		2231	1.40	.92		2234	.2284	.0165				
5-3	.00	.0040						2236	.2496	.0244				
5-4	.00	.0024						2242	.2181	.0478				
5-5	.00	.0024						2247	.1396	.0627				
5-6	.00	.0024						2252	.0800	.0719				
5-7	.00	.0024						2258	.0485	.0783				
5-8	.30	.0012						2304	.0317	.0823				
5-12	.04	.0003						2314	.0158	.0863				
5-13	.36	.0028						2328	.0077	.0890				
5-14	.00	.0004						2348	.0035	.0909				
5-16	.20	.0003						2400	.0021	.0915				
5-19	.19	.0003												
5-23	2/.43	3/ T					5-24	0020	.0011	.0920				
								0140	.0003	.0930				
								0454	4/.0001	.0936				
Watershed conditions: Mixed grass cover. 65% to 90% of area covered; average height, 3 in. to 5 in.														

Watershed conditions: Mixed grass cover. 65% to 90% of area covered; average height, 3 in. to 5 in.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 9.8111. 1/ RUNOFF FROM 2212 TO 2400. 2/ RAINFALL FROM 1650 TO 1720. 3/ RUNOFF FROM 0001 TO 2212. 4/ BEGINNING OF NEXT RUNOFF EVENT.



MOOREFIELD, WEST VIRGINIA WATERSHED W-2

Revised 1-1-62

MOOREFIELD, WEST VIRGINIA WATERSHED W-4

LOCATION: Hardy County, W. Va.; approximately 5 miles southwest of Moorefield; South Branch Potomac River Basin.

AREA: 6.32 acres.

SLOPES:	Slope—Percent	0-3	3-10	10-20
	Percent of area	0	26	74

SOILS: (Revision) Residual, derived from gray siltstones with some interbedding of calcareous shales.

Type	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Litz shaly silt loam	79	4	Weak fine granular	Rapid	-----	-----	4	Rapid	Medium
Litz silt loam	14	3	Moderate, fine granular	Moderate	Medium, sub-angular, blocky	Moderate	17	Moderate	Medium
Litz silt loam (moderately well-drained phase)	7	4	Weak fine granular	Moderate	Medium to fine, sub-angular blocky	Slow	12	Slow	slow

Depth to shale (in.)	0-12	12-18	18-24	24-30	>30
Percent of area	9	39	26	11	15

EROSION:	Erosion class	1	2	3
	Percent of area	0	1	.99

LAND CAPABILITY:	Class	I	II	III	IV
	Percent of area	0	7	30	63

GEOLOGY: Marcellus shale of Devonian age predominates. Depths to bedrock range from 6 in. to 60+ in. Structurally, the area is composed of several small anticlines and synclines with the strike of the formation being N34°E. Recording gage is located in a small erosional channel running down the dip. The average dip is 40°SE. Source of data: W. B. Ferguson, Geologist, SCS.

SURFACE DRAINAGE: (Revision) Cood; length of principal waterway, 480 ft.; a 290-ft. diversion used to bring runoff from west slope through gaging station. Remainder of watershed drains into a well defined waterway.

CHARACTER OF FLOW: Spring-fed, intermittent flow, continuous.

INSTRUMENTATION: (Revision) Runoff: H-4.5 precalibrated flume equipped with FW-1 recorder, with 12-hr. time scale. Precipitation: Recording rain gage with 12-hr. time scale.

WATERSHED CONDITIONS: (Revision) Permanent pasture with controlled grazing. The predominant species are Kentucky bluegrass, perennial lespedeza, povertygrass, buckhorn plantain and cinquefoil. Agricultural lime and phosphate (0-20-0) applied at the rate of 2 tons and 800 pounds per acre, respectively. Vegetative cover estimates for period of record are:

Year	1958	1959	1960	1961	1962
Percent bare space	45-60	5-40	5-25	5-35	5-30

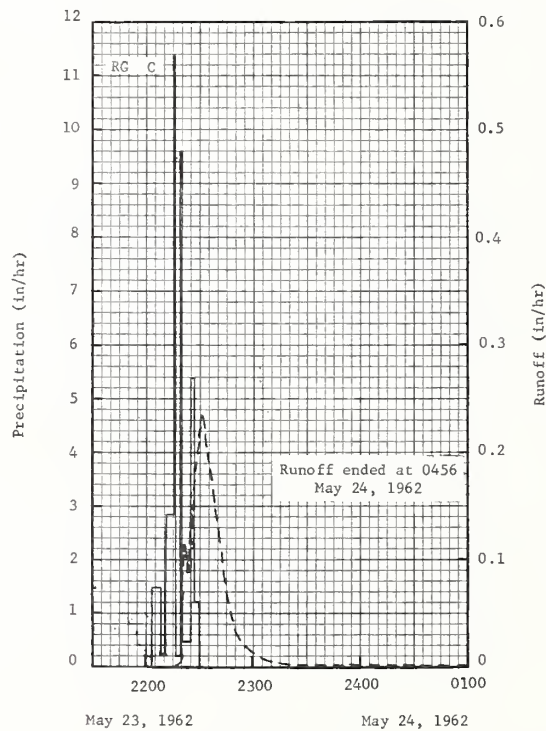
GENERALLY REPRESENTS: Pasture practices on shallow shale soil typical of large areas in eastern West Virginia, central Pennsylvania, western Maryland and parts of Virginia and Tennessee. Applicable to similar lands in the land resource areas of the Southern Appalachian Ridges and Valleys (N-128) and the Northern Appalachian Ridges and Valleys (S-147).

MONTHLY PRECIPITATION AND RUNOFF (inches)							MOOREFIELD, WEST VIRGINIA WATERSHED W-4							66.04
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P ₁ /Q	1.43 .13	3.41 .86	4.01 2.11	2.12 .07	5.61 .16	2.77 .02	2.98 .01	1.35 T	2.45 .01	2.89 .06	2.95 .17	2.14 .04	34.11 3.64
	STA AV ₂ /P Q	1.57 .08	2.77 .71	2.61 .66	2.69 .27	4.27 .26	3.16 .07	3.27 .08	2.56 .16	2.66 .07	1.94 .06	1.54 .04	1.89 .07	30.93 2.53
MEAN P 3/ 67 YR		2.21	2.05	2.74	2.73	3.43	3.76	3.58	3.36	2.51	2.41	1.74	1.99	32.51
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS														
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL											
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	5-23	.23	5-23	.07	2-26	.11	3-12	.25	3-12	.38	3-12	.51	3-12	.86
													3-11	1.39
MAXIMUMS FOR PERIOD OF RECORD														
1958 to 1962	8-3 1958	.69	8-3 1958	.27	2-19 1961	.31	2-19 1961	.54	2-19 1961	.67	2-18 1961	.81	2-18 1961	.97
													2-17 1961	1.54

Notes: Quality of records: Monthly P and Q, excellent. Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage C. 2/ Precipitation and runoff records began June 1958. 3/ Mean P based on 67-yr (1896-1962) U.S. Weather Bureau record period at or near Moorefield, W. Va. No records for 7 months each in 1915 and 1922 or for Mar. through June 1933. Missing records from July 1933 through Sept. 1940, Feb. through May 1948, and full years 1959-62 supplied from Moorefield McNeill station, 9 miles NNE of Moorefield, W. Va.

1962 SELECTED RUNOFF EVENT			MOOREFIELD, WEST VIRGINIA				WATERSHED W-4		66.04	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of May 23 and 24, 1962										
	RG C			RG C						
4-29	.31	.0000	5-23	2204	.00	.00	5-23	2216	.0000	.0000
4-30	.02	.0000		2208	1.50	.10		2218	.0005	T
5-1	1.20	.0252		2211	.20	.11		2219	.0243	.0002
5-2	.23	.0076		2215	2.85	.30		2220	.0518	.0009
5-8	.30	.0006		2216	11.40	.49		2221	.1145	.0022
5-12	.03	.0000		2219	.20	.50		2223	.0895	.0056
5-13	.37	.0006		2220	9.60	.66		2225	.1377	.0094
5-16	.20	.0000		2225	.48	.70		2231	.2338	.0280
5-19	.11	.0064		2227	5.40	.88		2238	.1527	.0506
5-23	1/.50	2/ T		2230	1.20	.94		2244	.0746	.0619
Watershed conditions: Mixed grass cover. 70% to 95% of area covered; average height, 3 in. to 5 in.								2252	.0286	.0688
								2300	.0119	.0715
								2310	.0042	.0729
								2322	.0017	.0735
								2400	.0005	.0742
							5-24	0456	.0000	.0753
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 6.3728. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 66.4-3. 1/ RAINFALL FROM 1650 TO 1659. 2/ RUNOFF FROM 0001 TO 2216.										

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 6.3728. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 66.4-3. 1/ RAINFALL FROM 1650 TO 1659. 2/ RUNOFF FROM 0001 TO 2216.



MOOREFIELD, WEST VIRGINIA WATERSHED W-4

Revised 1-1-62

MOOREFIELD, WEST VIRGINIA WATERSHED W-5

LOCATION: Hardy County, W. Va.; approximately 5 miles southwest of Moorefield; South Branch Potomac River Basin.

AREA: 9.55 acres.

SLOPES: (Revision)

Slope—Percent	0-3	3-10	10-20	20-30	30-40
Percent of area	0	62	31	6	1

SOILS: (Revision) Residual, derived from gray siltstones with some interbedding of calcareous shales.

Type	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Litz shaly silt loam	75	4	Weak, fine granular	Rapid	-----	-----	4	Rapid	Medium
Litz silt loam (moderately well-drained phase)	10	4	Weak fine granular	Moderate	Medium to fine, sub-angular blocky	Slow	12	Slow	Slow
Litz silt loam (moderately deep phase)	8	2	Weak fine granular	Rapid	Fine sub-angular blocky	Moderate	8	Moderate	Medium
Clarksburg silt loam	7	6	Weak medium granular	Slow	Moderate, fine, sub-angular (upper B); strong, fine, blocky (lower B)	Slow	20	Slow	Slow

Depth to shale (in.)	0-12	12-18	18-24	24-30	> 30
Percent of area	3	25	31	7	34

EROSION:

Erosion class	1	2	3	4
Percent of area	0	14	85	1

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII
Percent of area	0	9	45	45	0	0	1

GEOLOGY: Marcellus shale of Devonian age predominates. Depths to bedrock range from 4 in. to 60+ in. Structurally, the area is composed of several small anticlines and synclines with the general strike of the formation being N34°E. The runoff recording station is located in a small erosional channel running down the dip. The average dip of the formation is 40°SE. Source of data: W. B. Ferguson, Geologist, SCS.

SURFACE DRAINAGE: (Revision) Good; length of principal waterway, approximately 720 ft. A natural watershed with flow to a number of secondary waterways which drain into a common, well defined waterway.

CHARACTER OF FLOW: Spring-fed, intermittent flow, continuous.

INSTRUMENTATION: (Revision) Runoff: H-4.5 precalibrated flume equipped with FW-1 recorder, with 12-hr. time scale. Precipitation: Recording rain gage with 12-hr. time scale.

WATERSHED CONDITIONS: (Revision) Permanent pasture with controlled grazing. The predominant species are Canada and Kentucky bluegrass, povertygrass, buckhorn plantain and cinquefoil. Agricultural lime and phosphate (0-20-0) applied at the rate of 2 tons and 800 pounds per acre, respectively. Vegetative cover estimates for period of record are:

Year	1958	1959	1960	1961	1962
Percent bare space	35-85	5-35	2-5	5-15	5

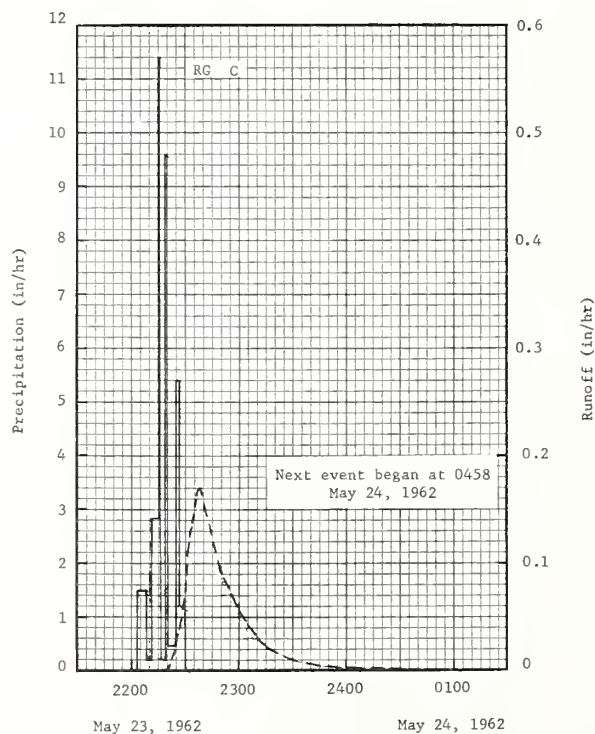
GENERALLY REPRESENTS: Pasture practices on shallow shale soil typical of large areas in eastern West Virginia, central Pennsylvania, western Maryland and parts of Virginia and Tennessee. Applicable to similar lands in the land resource areas of the Southern Appalachian Ridges and Valleys (N-128) and the Northern Appalachian Ridges and Valleys (S-147).

MONTHLY PRECIPITATION AND RUNOFF (inches)							MOOREFIELD, WEST VIRGINIA WATERSHED W-5							66.05		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ¹ /Q	1.43 .25	3.41 1.37	4.01 3.08	2.12 .21	5.61 .26	2.77 .03	2.98 T	1.35 .00	2.45 .00	2.89 .00	2.95 .30	2.14 .01	34.11 5.51		
STA AV ² /P	Q	1.57 .19	2.77 1.22	2.61 1.03	2.69 .49	4.27 .44	3.16 .10	3.27 .04	2.56 .11	2.66 .03	1.94 .07	1.54 .06	1.89 .12	30.93 3.90		
MEAN P ³ /67 YR		2.21	2.05	2.74	2.73	3.43	3.76	3.58	3.36	2.51	2.41	1.74	1.99	32.51		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	5-23	.17	2-26	.09	2-26	.15	3-12	.33	3-12	.55	3-12	.82	3-12	1.30	3-11	2.14
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1962	8-3 1958	.65	8-3 1958	.27	8-3 1958	.31	5-8 1960	.56	5-8 1960	.75	2-18 1961	.99	2-18 1961	1.39	2-17 1961	2.21

Notes: Quality of records: Monthly P and Q, excellent. Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage C. 2/ Precipitation and runoff records began June 1958. 3/ Mean P based on 67-yr (1896-1962) U.S. Weather Bureau record period at or near Moorefield, W. Va. No records for 7 months each in 1915 and 1922 or for Mar. through June 1933. Missing records from July 1933 through Sept. 1940, Feb. through May 1948, and full years 1959-62 supplied from Moorefield McNeill station, 9 miles NNE of Moorefield, W. Va.

1962			SELECTED RUNOFF EVENT			MOOREFIELD, WEST VIRGINIA			WATERSHED W-5			66.05	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)			
Event of May 23 and 24, 1962													
4-20	RG C .07	.0000	5-23	RG 2204	C .00	.00	5-23	2217	.0000	.0000			
4-23	.00	T		2208	1.50	.10		2222	.0007	T			
4-29	.31	.0000		2211	.20	.11		2224	.0189	.0004			
4-30	.02	.0000		2215	2.85	.30		2227	.0404	.0018			
5-1	1.20	.0564		2216	11.40	.49		2230	.0758	.0047			
5-2	.23	.0206		2219	.20	.50		2232	.1153	.0079			
5-3	.00	.0055		2220	9.60	.66		2237	.1639	.0196			
5-4	.00	.0017		2225	.48	.70		2238	.1684	.0223			
5-8	.30	.0029		2227	5.40	.88		2240	.1684	.0280			
5-12	.03	.0000		2230	1.20	.94		2252	.0847	.0533			
5-13	.37	.0020						2303	.0471	.0654			
5-16	.20	.0000						2313	.0251	.0714			
5-19	.11	.0001						2332	.0100	.0769			
5-23	1/.50	2/ T						2346	.0052	.0787			
Watershed conditions: Mixed grass cover, 95% to 100% of area covered; average height, 3 in. to 6 in.							5-24	2400	.0028	.0796			
								0030	.0011	.0806			
								0120	.0007	.0814			
								0200	.0003	.0818			
								0342	.0003	.0823			
							0350	3/.0001	.0823				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 9.6296. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 66.4-3. 1/ RAINFALL FROM 1650 TO 1659. 2/ RUNOFF FROM 0001 TO 2217. 3/ RUNOFF CONTINUES AT THIS RATE UNTIL NEXT RUNOFF WHICH BEGINS AT 0458.



MOOREFIELD, WEST VIRGINIA WATERSHED W-5

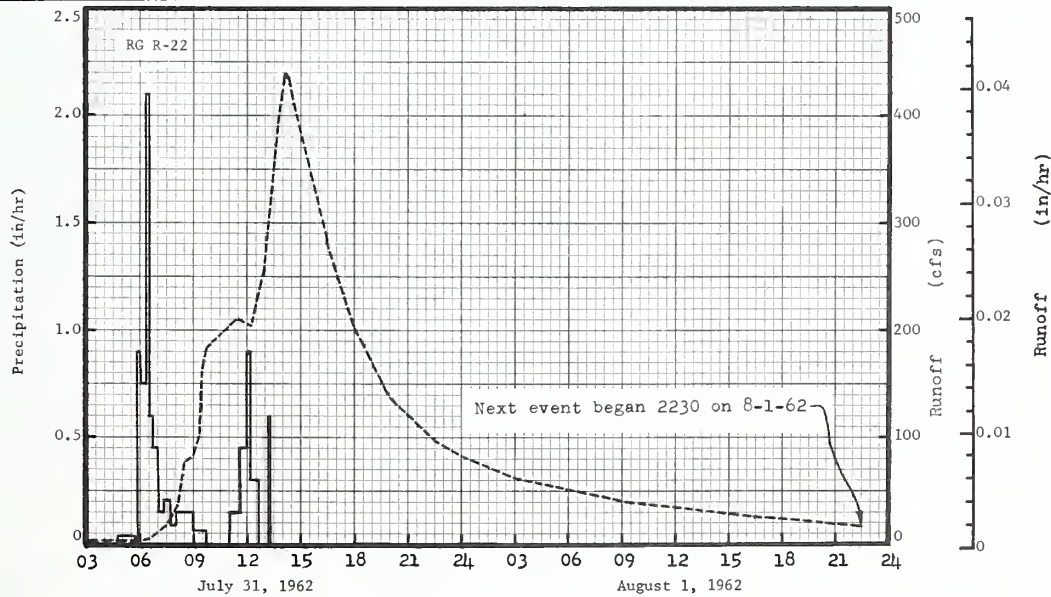
MONTHLY PRECIPITATION AND RUNOFF (inches)							NORTH DANVILLE, VERMONT AREA—10,610 ACRES (16.58 SQ. MILES)							67.01											
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL												
1962 P 1/ Q	2.23 .78	2.55 .29	2.12 1.02	2/ 3.59 6.55	2.79 2.04	2.80 .44	5.97 .61	3.03 .62	4.08 .70	7.29 3.42	2.60 2.42	2.11 .99	41.16 19.88												
STA AV ^{3/} P (58-62) Q	1.92 1.05	2.83 1.00	1.96 1.23	3.76 7.35	2.99 2.14	3.64 .92	4.49 .53	2.56 .37	3.29 .41	4.36 1.98	2.81 1.87	2.20 1.42	36.81 20.27												
MEAN P 4/ 67 YR	2.32	2.14	2.47	2.64	2.96	3.53	3.64	3.57	3.52	2.93	2.96	2.48	35.16												
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																						
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS										
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME									
1962	10-7	.06	10-7	.06	10-7	.11	10-7	.29	10-6	.57	10-6	1.00	10-6	1.34	4-6	2.94									
MAXIMUMS FOR PERIOD OF RECORD																									
1959 TO 1962	10-24 1959	.10	10-24 1959	.10	10-24 1959	.20	10-24 1959	.50	10-24 1959	.77	10-24 1959	1.14	10-24 1959	1.45	4-12 1960	3.86									
NOTES: Quality of records: P and Q, excellent. Watershed conditions: Predominantly hardwood forest, 64%; cultivated in long hay rotations, with about 1% in row crops, 17%; pasture, largely bluegrass, 15%; idle land in grass and woody plants, 3%; and homesites and roads, 1%. 1/ Precipitation is Thiessen weighted using 17 rain gages. 2/ Snow water equivalent on Mar. 27 was 6.4 in. and had completely melted by Apr. 30. 3/ Precipitation records began on some rain gages Oct. 1958. STA AV P values are averages of monthly Thiessen weighted values for 1960-62. Runoff records began Oct. 1958, all Q values included in averages. 4/ Mean P based on 67-yr (1895-1961) U.S. Weather Bureau record period at St. Johnsbury, Vt.																									
GEOLOGY: Very slightly anticlinal with no faults. Eastern portion (86 percent of watershed) is Waits River formation made up of calcareous granulite, calcareous schists, and cal-silicate rocks interbedded with quartz-mica schists and micaceous quartzite. This formation is approximately 10,000 ft. thick. The western portion (14 percent of watershed) is Gile Mountain formation of dark and light gray schists 3,000-6,500 ft. thick. Both formations are dense and impervious with no solution chambers. Both formations are Silurian and/or Devonian. Strike is generally north-south with dip toward the east in the eastern part of the watershed. Strike becomes east-west in the central part of the watershed with dip to the north. The western portion has a north-south strike with dip to the west. Dip ranges from 9° to 45° with an average of about 30°. Overlying these geologic formations is a dense, impervious glacial till (boulder clay) that is from 0-90 ft. deep. Source of data: The Geology of the Lyndonville Area, Vt., and The Geology of the St. Johnsbury Quadrangle, Vt. and N. H., Bulletin Nos. 8 and 13, Vermont Geological Survey, Vermont Development Commission, Montpelier, Vt. For geologic map and sections see, Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1960-61, USDA Misc. Pub. 994, P. 67.5-6.																									
1962 DAILY AIR TEMPERATURE (degrees F)							NORTH DANVILLE, VERMONT WATERSHED W-1 67.01																		
OAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	22	-3	-4	-27	30	1	33	29	56	35	80	53	69	49	78	50	82	59	56	45	39	30	50	22	
2	20	-6	10	-28	7	-6	30	17	42	37	62	46	68	38	74	46	72	44	67	31	45	22	49	20	
3	29	3	25	10	9	-7	27	13	44	36	67	43	69	32	81	42	74	38	73	32	36	25	38	22	
4	29	-12	29	19	23	4	37	8	45	37	78	34	72	34	80	54	73	38	68	44	39	30	50	26	
5	21	-9	43	24	31	20	46	19	53	30	63	48	61	40	83	60	57	47	59	47	32	26	47	27	
6	31	21	32	-7	32	24	53	21	53	28	71	50	68	33	84	63	56	33	48	46	26	21	45	35	
7	34	30	11	-13	35	17	45	34	51	30	71	38	77	42	76	66	68	28	50	45	41	15	35	26	
8	36	26	20	-9	41	8	50	36	46	23	70	36	82	42	75	55	74	36	53	46	53	32	33	28	
9	25	12	24	8	45	3	57	29	52	29	77	32	82	60	63	55	73	36	50	44	52	30	38	22	
10	14	5	11	-11	50	11	36	28	56	33	79	49	74	55	60	51	76	59	47	42	54	32	30	18	
11	15	-9	13	-22	46	12	42	24	57	23	79	56	78	45	64	52	69	56	50	32	48	26	20	-1	
12	22	-6	20	-16	32	22	49	23	63	21	70	50	84	50	78	44	60	54	71	39	30	15	16	-10	
13	19	-5	25	-9	32	25	32	25	67	25	70	42	71	56	72	51	75	44	42	33	29	15	14	-14	
14	28	-2	25	0	35	17	31	25	50	38	81	40	74	52	66	60	77	54	46	22	26	22	13	-4	
15	44	21	28	2	35	28	35	24	68	45	89	52	75	55	78	49	65	44	56	19	29	21	5	-14	
16	38	7	27	0	39	28	39	23	66	50	86	49	75	55	80	44	56	36	66	32	39	16	24	-4	
17	21	-7	27	9	37	27	41	27	85	48	87	50	77	51	75	55	60	36	66	43	32	21	18	-4	
18	12	-17	17	-5	32	17	47	19	89	56	67	47	74	56	67	43	62	46	55	29	30	18	28	-6	
19	17	5	15	-10	31	10	54	21	92	56	77	49	75	53	68	41	58	39	66	28	32	15	37	17	
20	20	7	22	14	40	5	56	27	79	52	65	52	81	45	87	54	47	28	73	36	33	15	26	-20	
21	23	-5	24	2	41	24	62	24	67	49	77	44	79	57	79	59	48	25	54	40	36	26	13	-24	
22	33	17	26	10	50	21	57	32	66	36	78	49	75	50	72	45	50	24	52	33	39	29	26	0	
23	25	1	29	18	36	24	58	31	73	33	73	59	72	44	75	39	60	34	54	36	30	20	27	17	
24	18	-7	18	-1	41	27	35	23	65	48	75	61	72	47	78	45	61	28	38	28	33	20	24	-4	
25	25	15	24	-8	37	34	50	23	69	41	76	59	78	41	80	46	65	28	38	26	38	19	19	-10	
26	25	-5	27	12	39	35	64	30	66	38	76	50	72	51	84	50	62	48	33	25	36	15	30	4	
27	29	-3	33	27	43	33	81	35	61	36	74	44	62	50	80	54	56	48	39	24	46	15	18	-20	
28	0	-15	32	30	51	26	84	46	73	28	82	38	79	50	79	58	54	48	50	32	54	15	27	0	
29	-3	-23	---	---	53	26	63	41	74	33	87	41	72	55	72	64	65	47	38	23	49	15	30	-2	
30	15	-11	---	---	61	34	41	36	86	40	86	53	82	60	82	58	56	47	35	20	56	16	20	-12	
31	-9	-22	---	---	36	29	---	---	76	58	---	---	72	58	84	50	---	---	42	31	---	---	---	0	-20
AV.	22	0	23	1	37	19	48	26	64	38	76	47	74	48	76	52	64	41	53	34	39	21	27	4	
MEAN	11.0	11.6	27.9	37.1	51.0	61.5	63.4	63.8	52.4	43.4	30.0	15.6													
STA AV	23	3	28	7	33	15	47	28	64	41	74	48	74	51	75	51	68	45	55	35	40	26	26	8	
NOTES: TEMPERATURE DATA FROM R-12. READINGS TAKEN DAILY EXCEPT WEEKENDS WHEN TAKEN FROM THERMOGRAPH CHARTS. STA AV (STATION AVERAGE) BASED ON 1960-62 RECORDS.																									

Cooperative Research Project of USDA and the Agricultural Experiment Station and the College of Technology, University of Vermont, and the Vermont Department of Water Resources

1962 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.02E	.00	.80	.02	.08	.03	.27	.00	.00	.34	.00
2	.00	.02E	.00	.01	.25	.00	.00	.00	.00	.00	.00	.00
3	.04	.04E	.06	.00	.30	.00	.00	.00	.00	.00	.28	.00
4	.10	.04E	.06	.00	.11	.00	.00	.00	.00	.00	.05	.00
5	.15	.06E	.14	.00	.00	.00	.00	.00	.22	.83	.00	.00
6	.37	.07E	.00	.00	.03	.00	.00	.00	.04	2.20	.00	.10
7	.25	.00	.00	.73	.00	.00	.00	.26	.00	.98E	.00	.05
8	.05	.00	.00	.00	.00	.00	.00	.00	.00	.02E	.00	.03
9	.00	.05	.00	.20	.00	.00	.65	.00	.00	.54	.00	.29
10	.00	.05	.00	.05	.00	.00	.00	.49	.95	.20	.30	.08
11	.00	.00	.00	.00	.00	.25	.00	.01	.48	.00	.40	.00
12	.00	.00	.32	.00	.00	.00	.10	.00	.00	.15	.00	.00
13	.00	.00	.28	.39S	.00	.00	.72	.00	.00	.00	.00	.00
14	.00	.11	.00	.11S	.20	.00	.00	.33	.10	.00	.00	.00
15	.53	.00	.00	.08S	.00	.00	.36	.00	.00	.00	.00	.00
16	.00	.00	.00	.04S	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.13	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00	.00	.00
19	.00	.35	.00	.00	.00	.75	.00	.00	.02	.00	.00	.05
20	.00	.08	.00	.00	1.10	.00	.00	.35	.12	.00	.00	.00
21	.00	.00	.00	.00	.05	.00	.26	.35	.00	.18	.14	.00
22	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.75	.63
23	.02	.15	.00	.17	.00	.85	.37	.00	.00	.06	.00	.14
24	.00	.70	.00	.00	.67	.08	.27	.00	.00	.03	.20S	.01
25	.03	.00	.00	.00	.00	.45	.00	.00	.00	.12	.00	.00
26	.08	.03	.00	.00	.00	.00	.33	.00	.25	.00	.00	.00
27	.15	.15	.02	.00	.00	.00	.00	.00	.30	.05	.00	.00
28	.00	.12	.00	.00	.00	.00	.05	.00	.05	.33	.00	.00
29	.00	-----	.00	.06	.00	.00	.00	.40	.05	.00	.00	.25
30	.28	-----	.00	.56	.00	.03	.00	.00	.00	.10	.00	.06
31	.00	-----	.92	-----	.00	-----	1.90	.00	-----	1.06	-----	.08
TOTAL	2.05	2.37	1.80	3.20	2.73	2.49	5.36	2.46	3.58	6.85	2.46	1.77
STA AV	2.37	2.55	2.10	2.92	2.40	2.95	3.31	2.99	2.70	5.26	3.31	2.48
NOTES: PRECIPITATION VALUES ARE FOR R-22A, ALL PRECIPITATION IN DEC., JAN., FEB., AND MAR. IS SNOW EXCEPT MAR. 31. STA AV (STATION AVERAGE) BASED ON 1959-62 RECORDS.												
1962 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	5.14	4.71	4.28	245.53	62.91	7.60	3.00	38.62	3.00	7.38	151.28	17.22
2	5.03	4.17	4.28	144.75	58.73	7.60	2.57	16.15	2.78	6.63	51.57	17.12
3	5.03	4.28	4.28	64.83	81.09	6.95	2.25	8.13	2.57	5.78	37.02	17.54
4	5.03	4.60	4.28	55.31	58.52	5.78	2.14	5.67	2.35	5.35	47.61	18.40
5	4.92	5.14	4.28	68.90	51.35	5.67	1.93	6.21	2.46	16.37	38.30	18.29
6	5.24	9.95	4.28	85.91	40.23	6.21	1.93	5.03	4.81	228.84	28.78	30.60
7	12.41	7.06	4.28	249.59	34.98	4.92	1.82	10.27	3.64	365.56	24.18	34.02
8	15.62	5.46	4.28	311.97	28.35	4.28	1.71	12.84	2.89	76.17	25.68	21.72
9	10.27	4.92	4.28	190.22	23.86	3.85	7.17	7.17	2.46	82.38	27.17	19.15
10	8.34	4.81	4.39	194.60	20.22	3.85	5.78	7.38	7.17	76.39	35.20	18.72
11	7.17	4.49	4.81	98.32	18.29	5.67	3.21	25.78	39.16	55.42	97.68	13.05
12	6.21	4.17	5.24	87.94	16.80	6.10	2.78	12.52	14.23	48.36	44.29	9.84
13	5.67	3.85	5.14	88.58	15.62	4.28	11.55	7.06	8.88	41.94	29.53	10.27
14	5.35	3.96	4.92	67.61	18.94	3.64	5.88	8.77	6.42	29.74	26.10	10.70
15	6.63	4.07	4.81	58.52	19.90	3.10	5.78	23.32	7.06	25.25	22.68	9.52
16	49.43	4.17	4.81	50.82	16.58	2.78	4.28	8.77	4.81	23.54	20.75	9.20
17	58.73	4.28	5.03	43.11	16.15	2.57	3.96	6.95	5.67	22.68	19.47	8.77
18	24.50	4.60	5.03	41.83	14.23	2.35	4.17	5.46	67.40	19.79	18.51	8.67
19	19.69	4.60	5.03	45.90	12.73	9.20	6.95	4.39	15.41	18.40	14.66	9.41
20	12.09	4.28	5.24	54.67	14.23	10.16	3.53	4.28	12.41	17.33	14.55	9.63
21	9.09	4.17	5.46	63.11	85.16	5.14	3.74	8.34	9.63	20.11	18.40	6.31
22	8.34	4.17	6.21	72.32	26.10	3.85	3.64	8.77	7.38	21.50	90.83	6.63
23	8.56	4.17	7.06	112.44	16.80	13.91	3.21	5.14	6.63	20.01	50.39	9.41
24	7.70	4.17	7.17	67.83	29.63	15.08	11.66	4.07	5.67	18.61	30.17	12.09
25	7.49	4.28	7.17	48.36	52.21	26.53	5.46	3.42	4.92	18.94	25.03	12.73
26	7.17	4.28	8.13	47.82	22.15	9.20	4.49	3.10	8.02	18.08	16.90	12.62
27	7.38	4.28	11.66	60.34	15.41	5.14	5.67	2.89	17.01	17.12	17.55	12.62
28	6.31	4.28	20.11	60.55	12.20	3.85	5.78	2.89	17.33	26.96	20.75	13.05
29	5.14	-----	40.65	52.85	10.16	3.21	3.85	5.24	10.48	46.43	17.22	14.23
30	4.71	-----	84.20	85.05	8.88	2.89	3.42	6.21	8.45	24.29	16.48	15.19
31	4.81	-----	162.51	-----	8.13	-----	137.15	3.64	-----	118.86	-----	13.48
MEAN	11.23	4.71	14.66	97.25	29.31	6.53	8.67	8.99	10.38	49.21	35.95	14.23
INCHES	.782	.294	1.016	6.549	2.042	.438	.605	.624	.697	3.419	2.419	.986
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0022433. RECORDS ARE EXCELLENT. SOME PERIODS OF WINTER RECORDS ADJUSTED DUE TO ICE JAMS AT THE WEIR.												

1962 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-1 67.01			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of July 31-August 1, 1962										
7-31	RG R-22 .00	1/.0017	7-31	RG	R-22		7-31			
				0440	.00	.00		0600	2.89	.0000
				0540	.03	.03		0630	3.21	.0002
				0550	.00	.03		0730	18.62	.0012
				0600	.90	.18		0745	26.43	.0017
				0620	.75	.43		0808	36.91	.0028
				0630	2.10	.78		0830	77.24	.0048
				0640	.60	.88		0900	84.52	.0086
				0700	.45	1.03		0915	100.67	.0107
				0720	.15	1.08		0930	160.16	.0138
				0740	.21	1.15		0945	184.01	.0178
				0800	.09	1.18		1030	196.85	.0312
				0900	.15	1.33		1130	210.12	.0502
				0940	.06	1.37		1215	204.77	.0647
				1100	.00	1.37		1300	253.45	.0808
				1140	.15	1.47		1345	395.95	.1036
				1200	.45	1.62		1415	438.10	.1230
				1210	.90	1.77		1630	285.33	.1991
				1240	.30	1.92		1800	204.77	.2335
				1312	.00	1.92		2000	198.33	.2656
				1314	.60	1.94		2230	98.96	.2933
			OTHER	RAIN	GAGE	TOTALS				
			R-1	2.25	R-15	2.50	8-01	2400	83.02	.3061
			R-2	2.15	R-16	1.89		0300	61.19	.3263
			R-3	2.20	R-19	2.03		0900	40.55	.3548
			R-5	2.34	R-20	1.77		1630	25.68	.3781
								2015	19.79	.3861
			R-6	2.00	R-20A	1.75		2230	2/ 18.62	.3901
			R-8	2.05	R-21	1.85				
			R-10	1.80	R-22A	1.90				
			R-12	1.99	AVG 3/	2.03				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000935. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 67.1-4. FOR ISOHYETAL MAP OF ABOVE STORM, SEE P. 67.5-4. 1/ RUNOFF PRIOR TO 0600 ON 7-31-62. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF, SEE PREVIOUS PAGE. 2/ BEGINNING OF NEXT EVENT. 3/ ARITHMETIC AVERAGE OF 16 RAIN GAGES.



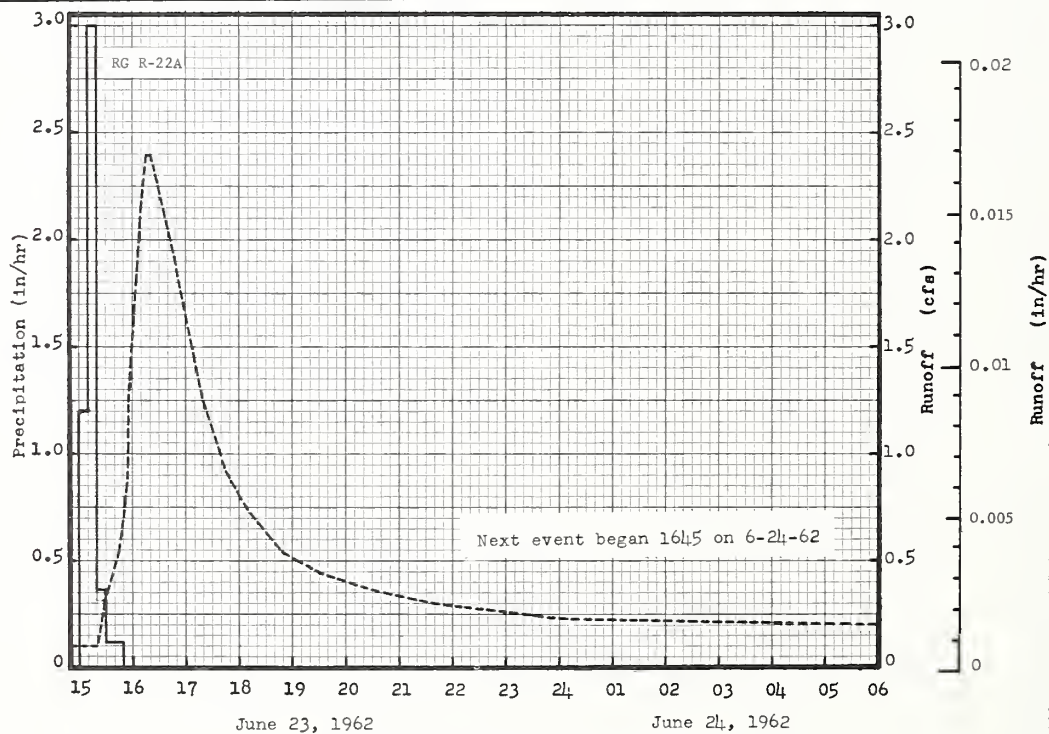
NORTH DANVILLE, VERMONT WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						NORTH DANVILLE, VERMONT WATERSHED W-2 AREA—146 ACRES								67.02												
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL												
1962	P ¹ / _O	1.96 .63	2.17 .30	2/ 1.84 1.88	3/ 3.26 3.53	2.70 1.46	2.60 .72	5.54 .57	2.69 .41	3.61 .52	7.03 1.84	2.44 2.21	1.76 2.57	37.60 16.64												
STA AV ⁴ / _P		2.13	2.65	1.89	2.93	2.38	2.93	3.35	3.21	2.70	5.11	3.11	2.26	34.65												
(58-62) O		.85	.72	1.44	3.94	1.85	.87	.52	.39	.35	.87	1.33	1.63	14.76												
MEAN P ² / _O		2.32	2.14	2.47	2.64	2.96	3.53	3.64	3.57	3.52	2.93	2.96	2.48	35.16												
67 YR																										
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																										
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																							
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS											
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME										
1962	3-30	.05	3-30	.05	3-30	.10	3-30	.27	3-30	.44	3-30	.63	3-30	1.14	3-28	2.54										
MAXIMUMS FOR PERIOD OF RECORD																										
19 59 TO 19 62	3-30 1962	.05	3-30 1962	.05	3-30 1962	.10	3-30 1962	.27	3-30 1962	.44	3-30 1962	.63	3-30 1962	1.14	3-28 1962	2.54										
NOTES: Quality of records: P and Q, excellent. Watershed conditions: Pasture of mostly bluegrass, 38%; cultivated land entirely in clover and orchard grass hay, 37%; and forest stand, predominantly hardwoods, 25%. 1/ Average watershed precipitation from Thiessen weighted average of R-22 and R-22A. 2/ Snow water loss from March 13 to March 27 was 1.0 inch. 3/ Snow water equivalent on March 27 was 4.1 inches and had completely melted by April 10. 4/ Precipitation records began in Sept. 1958; runoff records began in Oct. 1958. 5/ Mean P based on 67-yr (1895-1961) U.S. Weather Bureau record period at St. Johnsbury, Vt.																										
GEOLOGY: Very slightly anticlinal with no faults. The entire watershed is Waits River formation made up of calcareous granulate, calcareous schists, and cal-silicate rocks interbedded with quartz-mica schists and micaceous quartzite. The formation is Silurian and/or Devonian. The formation is dense and impervious with no solution chambers, and it is approximately 10,000 ft. thick. Strike is north-south with dip 40° toward the east. Overlying this formation is a dense, impervious glacial till (boulder clay) that is from 0-90 ft. deep. Source of data: The Geology of the St. Johnsbury Quadrangle, Vt. and N. H., Bulletin No. 13, Vermont Geological Survey, Vermont Development Commission, Montpelier, Vt. See Geologic map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1960-61, USDA Misc. Pub. 994, P. 67.5-6.																										
1962 DAILY AIR TEMPERATURE (degrees F)						NORTH DANVILLE, VERMONT WATERSHED W-2 67.02																				
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC			
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		
1	22	-3	-4	-27	30	1	33	29	56	35	80	53	69	49	78	50	82	59	56	45	39	30	50	22		
2	20	-6	10	-28	7	-6	30	17	42	37	62	46	68	38	74	46	72	44	67	31	45	22	49	20		
3	29	3	25	10	9	-7	27	13	44	36	67	43	69	32	81	42	74	38	73	32	36	25	38	22		
4	29	-12	29	19	23	4	37	8	45	37	78	34	72	34	80	54	73	38	68	44	39	30	50	26		
5	21	-9	43	24	31	20	46	19	53	30	63	48	61	40	83	60	57	47	59	47	32	26	47	27		
6	31	21	32	-7	32	24	53	21	53	28	71	50	68	33	84	63	56	33	48	46	26	21	45	35		
7	34	30	11	-13	35	17	45	34	51	30	71	38	77	42	76	66	68	28	50	45	41	15	35	26		
8	36	26	20	-9	41	8	50	36	46	23	70	36	82	42	75	55	74	36	53	46	53	32	33	28		
9	25	12	24	8	45	3	57	29	52	29	77	32	82	60	63	55	73	36	50	44	52	30	38	22		
10	14	5	11	-11	50	11	36	28	56	33	79	49	74	55	60	51	76	59	47	42	54	32	30	18		
11	15	-9	13	-22	46	12	42	24	57	23	79	56	78	45	64	52	69	56	50	32	48	26	20	-1		
12	22	-6	20	-16	32	22	49	23	63	21	70	50	84	50	78	44	60	54	71	39	30	15	16	-10		
13	19	-5	25	-9	32	25	32	25	67	25	70	42	71	56	72	51	75	44	42	33	29	15	14	-14		
14	28	-2	25	0	35	17	31	25	50	38	81	40	74	52	66	60	77	54	46	22	26	22	13	-4		
15	44	21	28	2	35	28	35	24	68	45	89	52	75	55	78	49	65	44	56	19	29	21	5	-14		
16	38	7	27	0	39	28	39	23	66	50	86	49	75	55	80	44	56	36	66	32	39	16	24	-4		
17	21	-7	27	9	37	27	41	27	85	48	87	50	77	51	75	55	60	36	66	43	32	21	18	-4		
18	12	-17	17	-5	32	17	47	19	89	56	67	47	74	56	67	43	62	46	55	29	30	18	28	-6		
19	17	5	15	-10	31	10	54	21	92	56	77	49	75	53	68	41	58	39	66	28	32	15	37	17		
20	20	7	22	14	40	5	56	27	79	52	65	52	81	45	87	54	47	28	73	36	33	15	26	-20		
21	23	-5	24	2	41	24	62	24	67	49	77	44	79	57	79	59	48	25	54	40	36	26	13	-24		
22	33	17	26	10	50	21	57	32	66	36	78	49	75	50	72	45	50	24	52	33	39	29	26	0		
23	25	1	29	18	36	24	58	31	73	33	73	59	72	44	75	39	60	34	54	36	30	20	27	17		
24	18	-7	18	-1	41	27	35	23	65	48	75	61	72	47	78	45	61	28	38	28	33	20	24	-4		
25	25	15	24	-8	37	34	50	23	69	41	76	59	78	41	80	46	65	28	38	26	38	19	19	-10		
26	25	-5	27	12	39	35	64	30	66	38	76	50	72	51	84	50	62	48	33	25	36	15	30	4		
27	29	-3	33	27	43	33	81	35	61	36	74	44	62	50	80	54	56	48	39	24	46	15	18	-20		
28	0	-15	32	30	51	26	84	46	73	28	82	38	79	50	79	58	54	48	50	32	54	15	27	0		
29	-3	-23	-----	-----	53	26	63	41	74	33	87	41	72	55	72	64	65	47	38	23	49	15	30	-2		
30	15	-11	-----	-----	61	34	41	36	86	40	86	53	82	60	82	58	56	47	35	20	56	16	20	-12		
31	-9	-22	-----	-----	36	29	-----	-----	76	58	-----	-----	72	58	84	50	-----	-----	42	31	-----	-----	0	-20		
AV.	22	0	23	1	37	19	48	26	64	38	76	47	74	48	76	52	64	41	53	34	39	21	27	4		
MEAN	11.0		11.6		27.9		37.1		51.0		61.5		63.4		63.8		52.4		43.4		30.0		15.6			
STA AV	23	3	28	7	33	15	47	28	64	41	74	48	74	51	75	51	68	45	55	35	40	26	26	8		
NOTES: TEMPERATURE DATA FROM R-12. READINGS TAKEN DAILY EXCEPT WEEKENDS WHEN TAKEN FROM THERMOGRAPH CHARTS. STA AV (STATION AVERAGE) BASED ON 1960-62 RECORDS.																										

1962 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-2 67.02						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.02E	.00	.80	.02	.08	.03	.27	.00	.00	.34	.00
2	.00	.02E	.00	.01	.25	.00	.00	.00	.00	.00	.00	.00
3	.04	.04E	.06	.00	.30	.00	.00	.00	.00	.00	.28	.00
4	.10	.04E	.06	.00	.11	.00	.00	.00	.00	.00	.05	.00
5	.15	.06E	.14	.00	.00	.00	.00	.00	.22	.83	.00	.00
6	.37	.07E	.00	.00	.03	.00	.00	.00	.04	2.20	.00	.10
7	.25	.00	.00	.73	.00	.00	.00	.26	.00	.98E	.00	.05
8	.05	.00	.00	.00	.00	.00	.00	.00	.00	.02E	.00	.03
9	.00	.05	.00	.20	.00	.00	.65	.00	.00	.54	.00	.29
10	.00	.05	.00	.05	.00	.00	.00	.49	.95	.20	.30	.08
11	.00	.00	.00	.00	.00	.25	.00	.01	.48	.00	.40	.00
12	.00	.00	.32	.00	.00	.00	.10	.00	.00	.15	.00	.00
13	.00	.00	.28	.39S	.00	.00	.72	.00	.00	.00	.00	.00
14	.00	.11	.00	.11S	.20	.00	.00	.33	.10	.00	.00	.00
15	.53	.00	.00	.08S	.00	.00	.36	.00	.00	.00	.00	.00
16	.00	.00	.00	.04S	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.13	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00	.00	.00
19	.00	.35	.00	.00	.00	.75	.00	.00	.02	.00	.00	.05
20	.00	.08	.00	.00	1.10	.00	.00	.35	.12	.00	.00	.00
21	.00	.00	.00	.00	.05	.00	.26	.35	.00	.18	.14	.00
22	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.75	.63
23	.02	.15	.00	.17	.00	.85	.37	.00	.00	.06	.00	.14
24	.00	.70	.00	.00	.67	.08	.27	.00	.00	.03	.20S	.01
25	.03	.00	.00	.00	.00	.45	.00	.00	.00	.12	.00	.00
26	.08	.03	.00	.00	.00	.00	.33	.00	.25	.00	.00	.00
27	.15	.15	.02	.00	.00	.00	.00	.00	.30	.05	.00	.00
28	.00	.12	.00	.00	.00	.00	.05	.00	.05	.33	.00	.00
29	.00	-----	.00	.06	.00	.00	.00	.40	.05	.00	.00	.25
30	.28	-----	.00	.56	.00	.03	.00	.00	.00	.10	.00	.06
31	.00	-----	.92	-----	.00	-----	1.90	.00	-----	1.06	-----	.08
TOTAL	2.05	2.37	1.80	3.20	2.73	2.49	5.36	2.46	3.58	6.85	2.46	1.77
STA AV	2.37	2.55	2.10	2.92	2.40	2.95	3.31	2.99	2.70	5.26	3.31	2.48
NOTES: PRECIPITATION VALUES ARE FOR R-22A. ALL PRECIPITATION IN DEC., JAN., FEB., AND MAR. IS SNOW EXCEPT MAR. 31. STA AV BASED ON 1959-62 RECORDS.												
1962 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-2 67.02						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.07	.06	.06	3.37	.40	.17	.08	.16	.04	.10	.77	.25
2	.07	.06	.07	1.17	.51	.17	.05	.10	.03	.08	.42	.30
3	.07	.06	.07	.96	.53	.16	.05	.08	.03	.08	.42	.45
4	.06	.06	.07	1.10	.41	.16	.05	.09	.03	.08	.60	.59
5	.06	.13	.07	1.21	.35	.15	.05	.08	.06	.31	.42	.62
6	.09	.16	.07	.94	.35	.17	.04	.07	.09	1.30	.41	.69
7	.18	.11	.07	1.66	.30	.13	.04	.10	.05	1.34	.39	.74
8	.12	.08	.07	1.21	.24	.13	.05	.09	.04	.30	.40	.60
9	.10	.07	.07	.89	.20	.11	.20	.07	.03	.57	.37	.47
10	.12	.06	.07	.82	.19	.14	.09	.14	.21	.44	.47	.49
11	.13	.04	.07	.60	.18	.20	.06	.17	.33	.34	.77	.52
12	.13	.05	.07	.55	.20	.15	.06	.09	.11	.34	.44	.54
13	.09	.08	.07	.63	.20	.13	.29	.07	.09	.26	.42	.43
14	.07	.07	.07	.60	.31	.11	.08	.15	.08	.23	.41	.41
15	.19	.06	.07	.58	.30	.09	.19	.11	.08	.23	.39	.57
16	.33	.07	.07	.47	.32	.08	.09	.06	.06	.23	.40	.43
17	.44	.07	.07	.43	.24	.08	.06	.09	.22	.27	.40	.41
18	.23	.07	.07	.40	.21	.09	.09	.07	.33	.23	.43	.46
19	.42	.06	.07	.40	.20	.35	.10	.05	.10	.23	.43	.42
20	.10	.06	.07	.38	.36	.20	.06	.08	.13	.23	.40	.65
21	.10	.06	.07	.37	.73	.13	.09	.13	.10	.33	.44	1.25
22	.10	.06	.10	.38	.25	.09	.05	.09	.08	.31	1.04	1.00
23	.08	.06	.10	.47	.20	.34	.09	.05	.08	.33	.55	.72
24	.08	.06	.17	.35	.48	.19	.21	.05	.07	.26	.47	.51
25	.08	.06	.13	.36	.37	.37	.06	.04	.07	.34	.57	.42
26	.08	.06	.19	.31	.25	.14	.12	.03	.14	.33	.39	.41
27	.08	.06	.49	.30	.20	.08	.11	.03	.20	.31	.40	.38
28	.10	.06	1.23	.28	.18	.08	.06	.04	.17	.36	.33	.34
29	.07	-----	1.68	.34	.17	.07	.05	.16	.10	.42	.31	.34
30	.06	-----	3.48	.61	.16	.07	.05	.06	.10	.34	.24	.38
31	.06	-----	2.80	-----	.17	-----	.95	.04	-----	1.02	-----	.37
MEAN	.13	.07	.38	.74	.30	.15	.12	.08	.11	.37	.46	.52
INCHES	.632	.303	1.882	3.526	1.459	.720	.575	.414	.516	1.836	2.213	2.572
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.1630258. RECORDS ARE EXCELLENT. SOME PERIODS OF WINTER RECORDS ARE ADJUSTED DUE TO ICE JAMS AT THE WEIR.												

1962			NORTH DANVILLE, VERMONT				WATERSHED W-2				67.02
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of June 23-24, 1962											
6-23	RG R-22A .00	1/.0123	6-23	1500	RG .00	.00	6-23	1520	.10	.0000	
				1510	R-22A 1.20	.20		1530	.33	.0002	
				1520	3.00	.70		1545	.54	.0010	
				1530	.36	.76		1550	.69	.0013	
				1550	.12	.80		1555	.86	.0017	
					OTHER	GAGE		1557	1.27	.0020	
					RG	R-22		1610	2.18	.0045	
						.70		1615	2.39	.0057	
								1620	2.39	.0070	
								1650	1.88	.0141	
				2 RG	AVG 2/	.75		1720	1.27	.0194	
								1745	.92	.0224	
								1810	.74	.0247	
								1850	.54	.0275	
								1930	.45	.0297	
								2030	.37	.0325	
								2140	.30	.0351	
								2400	.23	.0392	
							6-24	0600	.20	.0477	
								1200	.17	.0551	
								1645	3/ .15	.0601	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.006793. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 67.2-4. 1/ RUNOFF PRIOR TO 1520 ON 6-23-62. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF, SEE TABLES ON PREVIOUS PAGE. 2/ THIESSEN WEIGHTED USING 2 RAIN GAGES. 3/ BEGINNING OF NEXT EVENT.



NORTH DANVILLE, VERMONT WATERSHED W-2

MONTHLY PRECIPITATION AND RUNOFF (inches)						NORTH DANVILLE, VERMONT WATERSHED W-3 AREA—2,067 ACRES (3.23 SQ. MILES)						67.03				
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962	P ¹ / _Q	2.35 .67	2.69 .40	2.20 .85	2/3.75 6.33	2.91 2.73	2.96 .83	5.96 .75	3.55 .85	4.32 .85	7.47 3.18	2.72 2.70	2.22 1.35	43.10 21.49		
	STA AV ³ / _P (60-62) _Q	2.10 1.05	3.03 1.05	2.04 1.18	4.42 6.85	3.12 3.13	4.10 1.61	4.45 .93	2.68 .62	3.45 .61	4.52 1.51	2.95 1.54	2.36 1.00	39.22 21.08		
	MEAN P ⁴ / _Q	2.32	2.14	2.47	2.64	2.96	3.53	3.64	3.57	3.52	2.93	2.96	2.48	35.16		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	10-7	.03	10-7	.03	10-7	.06	4-7	.19	4-7	.36	4-7	.64	4-7	1.09	4-6	2.75
MAXIMUMS FOR PERIOD OF RECORD																
19 60 TO	4-18	.06	4-18	.05	4-18	.09	4-18	.28	4-18	.56	4-18	.86	4-17	1.40	4-14	3.79
19 62	1960		1960		1960		1960		1960		1960		1960		1960	
NOTES: Quality of records: P and Q, excellent. Watershed conditions: Forest, predominantly hardwoods, 67%; pasture of mostly bluegrass, 19%; cultivated land consisting of clover, orchard grass, and timothy hay with very small areas in row crops, 11%; and idle land in tall grasses and woody plants, 3%. 1/ Thiessen weighted values using 6 rain gages. 2/ Snow water equivalent on Mar. 27 was 6.4 inches, snow had completely melted by Apr. 30. 3/ Records of P and Q began Jan. 1, 1960. STA AV P values are averages of Thiessen weighted monthly values. 4/ Mean P based on 67-yr (1895-1961) U.S. Weather Bureau record period at St. Johnsbury, Vt.																
1962 DAILY AIR TEMPERATURE (degrees F)						NORTH DANVILLE, VERMONT WATERSHED W-3						67.03				
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN		
1	21 -6	-5-26	28 0	36 32	55 34	74 51	67 46	73 63	76 58	52 43	38 31	50 30				
2	21 -5	10-26	8-12	33 14	39 34	55 43	64 40	68 48	65 47	63 38	44 23	48 29				
3	25 9	25 10	9-10	32 12	39 33	63 41	66 36	73 46	68 44	70 40	36 27	44 28				
4	27-13	27 13	26 2	39 12	43 35	71 40	68 37	72 52	69 43	66 48	36 30	50 32				
5	21 -9	45 27	32 23	48 20	46 32	61 50	57 40	74 54	53 49	55 47	32 28	44 30				
6	29 20	30-14	35 23	55 26	49 30	66 48	66 37	75 59	55 34	48 46	28 23	41 34				
7	35 27	7-15	38 14	46 34	47 28	68 42	72 40	69 61	62 34	49 44	41 15	34 25				
8	37 22	19-11	42 8	50 37	43 20	68 41	77 44	70 52	66 39	53 46	47 33	30 26				
9	22 8	27 7	43 10	59 32	47 25	72 40	73 57	58 52	68 41	49 44	47 32	32 22				
10	10 1	10-12	49 15	38 31	51 39	73 49	67 48	57 47	68 56	49 42	47 36	28 20				
11	18-10	15-15	46 16	44 26	53 25	70 53	70 53	59 49	63 52	53 40	44 27	20 3				
12	22 -5	19 -9	32 22	52 25	58 27	66 48	77 50	71 43	52 50	65 40	33 14	17 -1				
13	18 -1	26 0	35 33	35 27	63 28	68 44	65 53	68 55	72 45	44 34	30 14	10 -6				
14	28 2	24 2	36 20	33 26	45 35	75 41	70 54	62 56	70 46	48 27	27 23	12 -2				
15	43 14	27 5	35 25	39 27	60 41	79 53	68 51	69 49	60 41	56 28	29 22	7-10				
16	34 4	28 3	39 23	35 23	59 44	78 52	68 51	71 46	54 39	62 36	37 17	19 0				
17	19-12	26 8	37 24	37 23	77 42	78 51	70 47	67 52	59 38	60 38	34 23	18 2				
18	9-20	15 -4	33 9	43 15	84 52	63 40	69 53	61 41	58 44	52 32	32 19	21 4				
19	14 -2	15 -9	32 3	49 19	84 53	70 48	68 52	62 40	55 37	62 34	35 13	27 17				
20	19 4	24 8	45 7	51 24	74 50	61 49	72 47	76 53	46 30	64 39	33 15	22-12				
21	19 -3	21 2	40 23	57 24	60 43	71 44	70 56	71 54	47 30	50 38	36 27	9-18				
22	39 19	26 10	46 17	52 28	60 38	72 49	69 48	66 47	48 28	50 34	38 28	18 6				
23	31 6	29 14	36 18	52 28	67 35	70 54	65 44	69 45	56 36	49 36	32 20	21 11				
24	24 -5	18 0	41 23	31 20	54 43	68 58	67 46	71 46	59 34	38 30	34 21	19 -6				
25	31 20	32 -6	35 30	48 21	63 38	69 54	70 44	74 46	60 35	38 24	34 15	16 -4				
26	32 -1	27 14	41 32	61 27	60 37	69 49	66 50	76 51	57 46	34 26	39 13	25 -2				
27	36 2	32 27	42 31	79 35	59 32	70 44	59 50	75 53	54 47	39 25	45 19	16 -8				
28	7-14	32 28	50 28	78 41	70 33	74 42	72 50	71 56	53 46	46 33	54 25	20 2				
29	5-23	---	57 28	63 37	72 37	79 46	69 52	65 58	62 46	38 26	50 30	22 2				
30	23 -6	---	66 37	38 34	79 41	80 52	72 57	75 54	53 47	34 22	54 30	14-19				
31	5-19	---	43 32	---	69 58	---	74 56	78 52	---	42 32	---	-3-18				
AV.	23 0	20 1	38 18	47 26	59 37	70 47	69 48	69 51	60 42	51 36	38 23	24 7				
MEAN	11.5	10.5	28.0	36.5	48.0	58.5	58.5	60.0	51.0	43.5	30.5	15.5				
STA AV	21 -1	26 4	36 16	44 20	58 37	70 47	71 50	70 51	66 46	54 36	38 24	25 10				
NOTES: TEMPERATURE DATA FROM R-3, READINGS TAKEN DAILY MON. THROUGH FRI. FROM MAY 1 TO OCT. 1. WINTER AND WEEKEND VALUES TAKEN FROM HYGROTHERMOGRAPH CHARTS. STA AV (STATION AVERAGE) BASED ON 1960-62 RECORDS.																

Cooperative Research Project of USDA and the Agricultural Experiment Station and the College of Technology, University of Vermont, and the Vermont Department of Water Resources

1962 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-3 67.03						
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.02	.02E	.05	.06	.05	.18	.04	.15	.00	.03	.27	.00
2	.00	.00E	.00	.06	.22	.00	.00	.00	.00	.00	.00	.00
3	.05	.10E	.06	.00	.36	.00	.00	.00	.00	.00	.33	.00
4	.12	.04E	.14	.00	.17	.00	.00	.30	.00	.00	.05	.00
5	.13	.12E	.26	.00	.00	.03	.00	.00	.31	.85	.00	.05
6	.41	.12E	.00	.03	.05	.00	.00	.50	.09	2.15	.00	.20
7	.24	.00	.00	.82	.00	.00	.00	.55	.00	1.05	.00	.10
8	.05	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.05
9	.04	.08	.00	.27	.00	.00	1.09	.05	.00	.56	.00	.30
10	.00	.03	.00	.08	.00	.00	.02	.45	1.00	.25	.38	.14
11	.00	.00	.00	.00	.00	.34	.00	.02	.45	.00	.37	.00
12	.00	.00	.38	.00	.00	.00	.00	.00	.04	.20	.00	.00
13	.00	.00	.33	.40S	.00	.00	.66	.00	.00	.00	.00	.00
14	.00	.13	.00	.15S	.20	.00	.00	.60	.06	.00	.00	.00
15	.63	.03	.00	.15S	.00	.00	.18	.00	.00	.00	.00	.00
16	.02	.02	.00	.06S	.08	.00	.10	.00	.00	.00	.00	.00
17	.05	.16	.00	.00	.00	.00	.05	.00	1.13	.05	.00	.00
18	.00	.00	.00	.00	.00	.00	.06	.00	.07	.00	.05	.00
19	.00	.37	.00	.00	.00	.91	.00	.00	.09	.00	.00	.08
20	.00	.05	.06	.00	1.26	.00	.00	.45	.12	.00	.00	.03
21	.00	.02	.00	.00	.00	.00	.30	.32	.00	.19	.15	.00
22	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00	.80	.65
23	.05	.05	.00	.14	.00	.70	.43	.00	.00	.06	.05S	.13
24	.00	.62	.00	.00	.63	.13	.23	.00	.00	.06	.20S	.18
25	.04	.10	.00	.05	.00	.30	.00	.00	.00	.19	.00	.00
26	.07	.10	.00	.00	.00	.00	.39	.00	.23	.00	.00	.00
27	.17	.02	.04	.00	.00	.00	.19	.00	.36	.10	.00	.00
28	.00	.10	.00	.00	.00	.00	.00	.00	.13	.40	.00	.00
29	.00	-----	.00	.14	.00	.00	.03	.45	.05	.00	.00	.30
30	.27	-----	.00	.52	.00	.05	.00	.00	.00	.16	.00	.00
31	.02	-----	.91	-----	.00	-----	1.92	.00	-----	1.14	-----	.10
TOTAL	2.38	2.60	2.23	3.76	3.02	2.64	5.69	3.84	4.13	7.43	2.65	2.31
STA AV	2.65	2.89	2.41	3.33	3.11	4.17	3.49	3.39	3.22	5.79	3.62	2.94
NOTES: PRECIPITATION VALUES ARE FROM R-16. ALL PRECIPITATION IN DEC., JAN., FEB., AND MAR. IS SNOW EXCEPT MAR. 31. STA AV BASED ON 1959-62 RECORDS.												
1962 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-3 67.03						
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.45	1.28	1.24	27.69	13.91	3.24	1.24	5.25	1.13	2.07	22.27	5.04
2	1.39	1.28	1.19	16.39	14.02	3.20	1.02	2.71	1.09	1.90	10.28	4.99
3	1.37	1.24	1.19	8.98	17.18	2.90	.96	1.75	1.00	1.77	8.71	4.69
4	1.37	1.19	1.19	9.73	14.21	2.52	.94	1.83	.98	1.69	10.01	5.08
5	1.32	1.47	1.19	10.35	12.72	2.54	.85	1.98	1.07	4.35	8.47	4.95
6	1.62	1.98	1.19	13.55	10.63	2.69	.83	2.05	1.94	29.55	7.15	7.25
7	2.94	1.51	1.19	39.96	9.49	2.20	.81	4.97	1.15	44.46	6.59	6.66
8	2.37	1.39	1.19	52.02	8.24	2.05	.81	3.52	1.02	12.76	7.06	5.14
9	1.96	1.34	1.19	39.17	7.40	1.86	.416	2.30	1.00	15.21	7.28	4.84
10	1.62	1.26	1.30	34.67	6.83	1.79	1.90	2.90	3.37	14.51	8.90	4.65
11	1.56	1.19	1.43	21.66	6.29	2.65	1.15	5.08	8.45	11.35	16.62	4.05
12	1.54	1.19	1.45	20.91	5.97	2.22	1.02	2.56	3.03	10.67	9.24	4.22
13	1.43	1.19	1.39	19.14	5.50	1.81	3.80	2.11	2.15	9.22	7.60	3.48
14	1.37	1.19	1.30	15.40	6.70	1.56	1.66	3.58	1.81	7.72	6.96	3.56
15	2.01	1.19	1.28	13.72	6.36	1.43	1.62	5.10	1.54	6.96	6.42	6.02
16	7.60	1.19	1.30	13.08	6.38	1.32	1.49	2.35	1.39	6.51	6.02	3.76
17	3.71	1.19	1.28	11.14	5.68	1.26	1.56	1.94	2.39	6.55	5.95	3.03
18	2.47	1.19	1.28	11.44	5.10	1.19	1.17	1.64	11.03	5.95	5.74	2.92
19	2.07	1.19	1.28	12.52	4.59	4.25	1.09	1.54	2.99	5.46	5.18	2.92
20	1.98	1.19	1.32	14.23	5.87	3.05	.96	1.60	2.80	5.14	4.86	2.86
21	1.88	1.19	1.37	16.07	17.75	1.96	1.49	3.29	2.24	6.00	5.23	2.54
22	1.75	1.19	1.49	17.03	6.36	1.54	1.22	2.52	1.98	5.70	15.77	2.65
23	1.69	1.19	1.56	23.04	5.01	5.70	1.19	1.75	1.94	5.31	8.96	2.65
24	1.58	1.19	1.54	15.06	7.62	3.71	3.35	1.47	1.71	5.18	6.89	2.60
25	1.56	1.19	1.58	12.65	9.09	6.91	1.43	1.32	1.62	5.29	6.12	2.60
26	1.51	1.24	1.62	12.78	5.48	2.65	1.58	1.19	2.41	5.16	5.57	2.75
27	1.56	1.28	1.98	14.70	4.50	1.77	2.15	1.19	3.80	4.99	5.27	2.88
28	1.47	1.28	3.41	14.21	4.03	1.47	1.83	1.19	3.99	6.51	5.01	2.88
29	1.32	-----	5.31	12.89	3.65	1.32	1.28	2.20	2.47	9.24	5.04	2.88
30	1.28	-----	10.95	18.50	3.35	1.17	1.19	1.88	2.22	5.74	5.04	2.82
31	1.28	-----	19.61	-----	3.18	-----	21.38	1.22	-----	19.59	-----	2.73
MEAN	1.94	1.28	2.45	18.75	7.83	2.45	2.15	2.45	2.52	9.11	8.00	3.88
INCHES	.675	.401	.853	6.329	2.734	.830	.754	.854	.851	3.177	2.702	1.351
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.015151. RECORDS ARE EXCELLENT. SOME PERIODS OF WINTER RECORDS ARE ADJUSTED DUE TO ICE JAMS AT THE WEIR.												

1962			SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT			WATERSHED W-3			67.03	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
			Event of July 31-August 1, 1962										
7-31	RG R-16 .00	1/.0032	7-31	RG 0500	R-16 .00	.00	7-31	0600	1.19	.0000			
				0520	.06	.02		0615	2.09	.0002			
				0600	.03	.04		0625	2.09	.0004			
				0620	.84	.32		0635	3.03	.0006			
				0630	1.20	.52		0645	3.48	.0008			
Watershed conditions: 67% forest; 19% pastured land; 11% hay with about 6-inch growth since last cutting; and 3% idle land with dense grass and brush growth.				0650	.60	.72		0700	5.14	.0013			
				0720	.10	.77		0715	8.24	.0021			
				0740	.30	.87		0730	14.15	.0034			
				0800	.15	.92		0745	17.41	.0053			
				0900	.20	1.12		0800	20.14	.0075			
				0920	.30	1.22		0815	23.66	.0100			
				1100	.00	1.22		0830	28.68	.0131			
				1120	.15	1.27		0900	34.97	.0206			
				1200	.30	1.47		0930	37.72	.0291			
				1210	1.20	1.67		1000	38.43	.0380			
				1220	.60	1.77		1015	37.72	.0425			
				1240	.30	1.87		1145	29.87	.0662			
				1300	.06	1.89		1200	30.49	.0698			
			OTHER	GAGE	TOTALS		1230	52.51	.0795				
							1300	72.48	.0942				
			RG	R-1	2.25		1330	72.48	.1112				
			RG	R-3	2.20		1355	67.36	.1248				
			RG	R-6	2.00		1500	45.13	.1534				
			RG	R-20	1.77		1600	33.01	.1717				
			RG	R-20A	1.75		1730	23.13	.1914				
			6 RG	AVG 2/	2.03		1910	17.86	.2074				
							2100	13.76	.2210				
							2315	10.31	.2337				
							2400	9.69	.2372				
							0100	8.81	.2416				
							0330	7.45	.2511				
							0630	6.23	.2607				
							2000	3/ 3.03	.2900				

MONTHLY PRECIPITATION AND RUNOFF (inches)						NORTH DANVILLE, VERMONT AREA—27,469 ACRES (42.92 SQ. MILES)								67.05	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1962	P ¹ / ₀	2.14	2.39	2/2.01	3/3.45	2.70	2.55	5.72	2.95	3.79	7.12	2.54	2.09	39.45	
	O	2.01	1.22	2.74	6.15	2.16	.45	.55	.56	.59	2.92	2.52	1.92	23.79	
STA AV ⁴ / _P (60-62) O		1.80	2.63	1.89	3.67	2.90	3.68	4.39	2.60	3.13	4.26	2.71	2.16	35.82	
		1.82	1.89	2.58	6.61	2.63	1.21	.69	.43	.46	1.40	1.41	1.28	22.41	
MEAN 67 YR	P ⁵ / ₀	2.32	2.14	2.47	2.64	2.96	3.53	3.64	3.57	3.52	2.93	2.96	2.48	35.16	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	10-7	.03	10-7	.03	10-7	.06	10-7	.20	10-7	.38	10-6	.70	4-7	1.07	4-5	2.64

MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1962	4-18 1960	.04	4-18 1960	.04	4-18 1960	.08	4-18 1960	.20	10-7 1962	.38	10-6 1962	.70	4-7 1962	1.07	4-12 1960	3.14

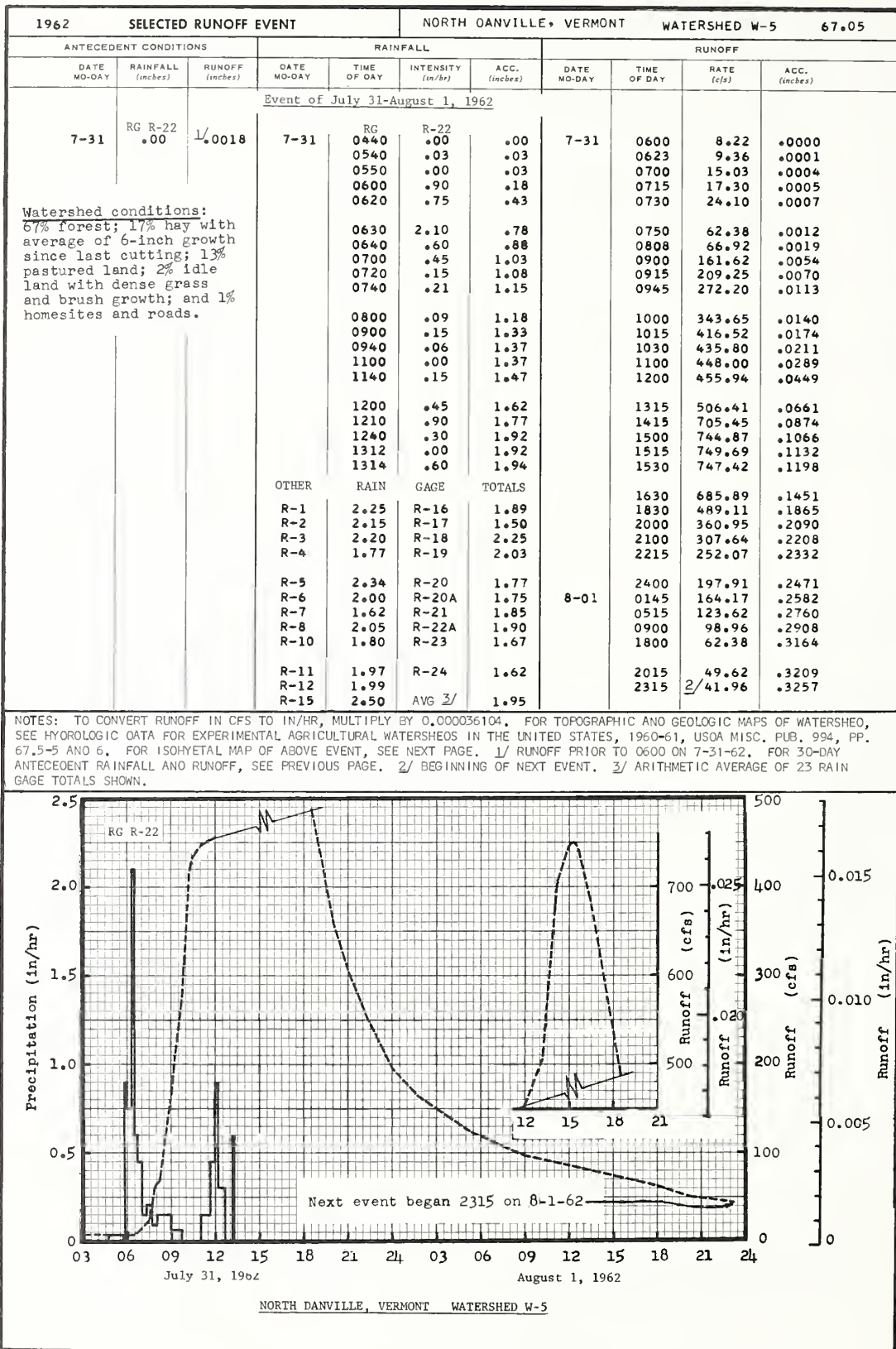
NOTES: Quality of records: P and Q, excellent. Watershed conditions: Forest, predominantly hardwoods, 67%; cultivated land consisting of mostly clover, orchard grass, and timothy hay with very little in row crops, 17%; pasture of mostly bluegrass, 13%; idle land in tall grasses and woody plants, 2%; and homesites and roads, 1%. 1/ Monthly P values are Thiessen weighted using 24 rain gages. 2/ Snow melt from Feb. 27 to Mar. 27 totaled 1.1 inches. 3/ Snow water equivalent on Mar. 27 was 6.4 inches and had completely melted by Apr. 30. 4/ Runoff records began Jan. 1, 1960; precipitation records began at various times, averages computed from gages with records from Jan. 1, 1960 to Dec. 31, 1962, average P values from Thiessen weighted monthly values. 5/ Mean P based on 67-yr (1895-1961) U.S. Weather Bureau record period at St. Johnsbury, Vt.

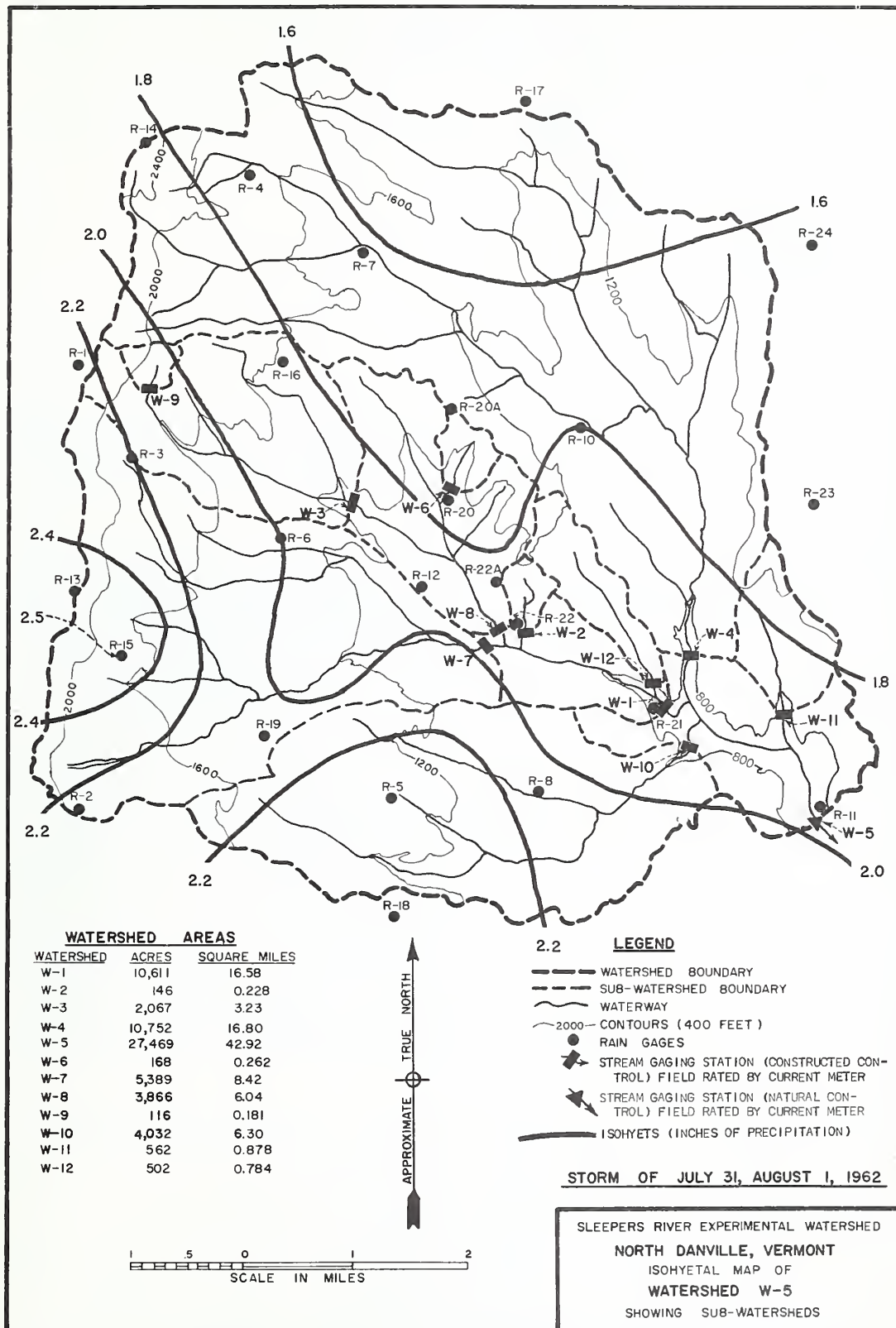
1962 DAILY AIR TEMPERATURE (degrees F)						NORTH DANVILLE, VERMONT WATERSHED W-5								67.05	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN	MAX MIN		
1	19 0	-4-19	27 0	39 36	54 35	75 57	68 50	73 53	78 61	48 40	35 27	49 31			
2	19 5	12-18	7 -7	37 23	40 36	57 45	66 40	70 51	66 47	62 33	42 22	46 28			
3	26 6	24 12	8 -7	34 22	41 35	63 42	68 41	76 51	70 47	66 38	32 28	46 34			
4	28-16	26 12	24 1	43 21	43 36	72 45	69 43	74 59	69 48	63 47	33 26	48 34			
5	19 -8	48 26	29 23	51 30	46 38	62 53	57 40	77 60	55 48	51 43	28 22	40 32			
6	30 19	28-10	32 21	56 36	49 37	66 49	67 40	78 64	56 38	44 42	23 18	38 32			
7	37 27	8-14	36 18	51 45	49 30	69 41	74 43	70 64	66 38	45 40	10 13	31 23			
8	35 21	21 0	38 16	58 41	43 27	69 43	78 52	70 52	70 46	49 41	46 31	28 24			
9	21 8	25 9	39 18	60 35	47 29	73 48	74 58	59 52	70 49	47 41	44 32	30 24			
10	10 0	9-11	45 15	39 33	53 34	74 59	68 50	56 45	72 58	46 39	45 34	26 16			
11	20 -4	11-14	48 15	46 29	55 30	72 53	72 52	58 47	66 53	50 40	42 23	18 6			
12	23 4	17 -4	30 27	52 33	59 33	65 50	78 56	69 42	54 52	62 40	29 14	15 -2			
13	18 4	25 1	31 23	39 31	64 39	67 48	66 54	68 53	74 48	42 31	24 14	14 -4			
14	27 9	21 8	34 20	34 29	48 37	76 45	72 55	64 57	72 51	46 26	22 18	14 -4			
15	43 22	24 10	31 25	41 28	60 43	80 52	69 54	73 52	60 47	55 28	24 18	7 -8			
16	52 11	26 8	38 25	35 21	59 46	80 54	69 54	75 53	53 40	60 41	34 14	21 5			
17	17-13	24 8	35 24	35 19	78 44	80 57	69 52	70 53	60 40	61 39	30 19	20 6			
18	9-14	16 -1	32 17	40 17	84 60	64 43	72 55	64 42	58 44	50 30	28 16	36 8			
19	15 1	15 -2	33 13	45 23	84 60	70 50	71 53	64 44	57 40	60 38	31 12	29 18			
20	18 4	22 10	41 16	49 29	75 55	61 51	76 51	80 57	44 32	62 44	28 15	24-14			
21	21 0	20 4	36 28	54 29	61 47	74 50	72 57	73 55	46 32	59 34	34 22	10-16			
22	37 21	25 9	44 24	49 34	61 38	74 54	70 50	68 49	47 32	48 32	35 23	17 4			
23	29 5	26 14	35 18	49 24	67 39	71 57	66 48	69 47	58 37	46 32	26 22	20 9			
24	26 1	16 2	40 21	27 21	58 45	69 62	68 49	73 51	60 37	35 27	30 21	18 -2			
25	29 20	23 -2	33 29	44 19	62 45	71 58	72 48	77 53	62 38	36 24	31 16	14 0			
26	32 5	27 14	38 30	59 27	61 45	70 50	68 50	77 57	58 48	36 23	38 14	24 0			
27	35 1	31 26	39 29	79 45	60 38	70 48	54 49	75 60	53 46	35 22	46 22	10 -6			
28	7-11	30 28	48 30	78 53	69 40	76 50	73 50	72 60	50 45	46 30	54 28	18 5			
29	3-19	-----	57 32	60 39	73 49	81 53	66 57	67 58	59 45	34 22	58 36	21 8			
30	22 -7	-----	66 47	39 36	81 55	82 58	74 58	77 55	52 46	30 20	54 34	21-22			
31	-4-19	-----	47 36	-----	73 61	-----	65 56	81 57	-----	43 29	-----	-6-22			
AV.	23 3	21 4	36 20	47 30	60 41	71 51	69 50	71 53	61 44	49 34	36 22	24 8			
MEAN	13.0	12.5	28.0	38.5	50.5	61.0	59.5	62.0	52.5	41.5	29.0	16.0			
STA AV	20 3	25 8	32 15	45 29	61 46	70 51	71 53	72 53	65 47	51 34	37 25	25 10			

NOTES: TEMPERATURE DATA FROM R-1, READINGS TAKEN DAILY MON. THROUGH FRI. FROM MAY 1 TO OCT. 1. WINTER AND WEEKEND VALUES TAKEN FROM HYGROTHERMOGRAPH CHARTS. FOR OTHER TEMPERATURE RECORDS SEE PAGES 67.2 1 AND 67.3-1 OF THIS PUBLICATION. STA AV (STATION AVERAGE) BASED ON 1960-62 RECORDS.

Cooperative Research Project of USDA and the Agricultural Experiment Station and the College of Technology, University of Vermont, and the Vermont Department of Water Resources

1962 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-5 67.05						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.02E	.00	.80	.02	.08	.03	.27	.00	.00	.34	.00
2	.00	.02E	.00	.01	.25	.00	.00	.00	.00	.00	.00	.00
3	.04	.04E	.06	.00	.30	.00	.00	.00	.00	.00	.28	.00
4	.10	.04E	.06	.00	.11	.00	.00	.00	.00	.00	.05	.00
5	.15	.06E	.14	.00	.00	.00	.00	.00	.22	.83	.00	.00
6	.37	.07E	.00	.00	.03	.00	.00	.00	.04	2.20	.00	.10
7	.25	.00	.00	.73	.00	.00	.00	.26	.00	.98E	.00	.05
8	.05	.00	.00	.00	.00	.00	.00	.00	.00	.02E	.00	.03
9	.00	.05	.00	.20	.00	.00	.65	.00	.00	.54	.00	.29
10	.00	.05	.00	.05	.00	.00	.00	.49	.95	.20	.30	.08
11	.00	.00	.00	.00	.00	.25	.00	.01	.48	.00	.40	.00
12	.00	.00	.32	.00	.00	.00	.10	.00	.00	.15	.00	.00
13	.00	.00	.28	.39S	.00	.00	.72	.00	.00	.00	.00	.00
14	.00	.11	.00	.11S	.20	.00	.00	.33	.10	.00	.00	.00
15	.53	.00	.00	.08S	.00	.00	.36	.00	.00	.00	.00	.00
16	.00	.00	.00	.04S	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.13	.00	.00	.00	.00	.00	.00	1.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00	.00	.00
19	.00	.35	.00	.00	.00	.75	.00	.00	.02	.00	.00	.05
20	.00	.08	.00	.00	1.10	.00	.00	.35	.12	.00	.00	.00
21	.00	.00	.00	.00	.05	.00	.26	.35	.00	.18	.14	.00
22	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.75	.63
23	.02	.15	.00	.17	.00	.85	.37	.00	.00	.06	.00	.14
24	.00	.70	.00	.00	.67	.08	.27	.00	.00	.03	.20S	.01
25	.03	.00	.00	.00	.00	.45	.00	.00	.00	.12	.00	.00
26	.08	.03	.00	.00	.00	.00	.33	.00	.25	.00	.00	.00
27	.15	.15	.02	.00	.00	.00	.00	.00	.30	.05	.00	.00
28	.00	.12	.00	.00	.00	.00	.05	.00	.05	.33	.00	.00
29	.00	-----	.00	.06	.00	.00	.00	.40	.05	.00	.00	.25
30	.28	-----	.00	.56	.00	.03	.00	.00	.00	.10	.00	.06
31	.00	-----	.92	-----	.00	-----	1.90	.00	-----	1.06	-----	.08
TOTAL	2.05	2.37	1.80	3.20	2.73	2.49	5.36	2.46	3.58	6.85	2.46	1.77
STA AV	2.37	2.55	2.10	2.92	2.40	2.95	3.31	2.99	2.70	5.26	3.31	2.48
NOTES: PRECIPITATION VALUES ARE FOR R-22A, ALL PRECIPITATION IN DEC., JAN., FEB., AND MAR. IS SNOW EXCEPT MAR. 31. STA AV BASED ON 1959-62 RECORDS.												
1962 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-5 67.05						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	25.80	39.13	37.71	586.93	164.17	21.27	8.79	94.14	8.79	16.45	358.68	57.84
2	49.62	21.55	35.73	322.39	151.70	21.27	7.37	31.47	8.51	15.03	128.44	57.28
3	66.63	26.94	33.46	279.57	202.17	19.56	6.24	17.86	7.37	14.18	97.82	59.26
4	48.76	34.31	29.49	141.49	151.41	17.30	5.67	13.89	6.52	13.61	121.92	58.41
5	30.33	47.35	27.50	212.37	133.27	16.73	5.10	15.03	6.81	30.91	104.34	57.84
6	33.17	134.40	27.50	245.55	112.28	18.43	5.10	12.48	13.61	435.24	83.08	85.06
7	92.71	92.72	22.68	541.85	102.08	15.59	4.54	22.68	10.49	714.53	72.59	92.43
8	104.06	46.50	23.53	674.55	85.35	13.89	4.25	30.34	8.22	178.63	75.71	64.08
9	70.88	31.19	27.22	461.61	75.42	12.76	14.18	16.73	7.09	182.60	78.82	56.71
10	47.64	26.94	25.52	458.77	67.20	11.91	17.01	16.16	13.89	178.92	90.17	58.41
11	63.80	22.12	31.47	251.22	60.68	15.31	9.36	66.07	96.40	134.68	224.85	45.93
12	92.85	31.76	47.92	222.58	55.57	16.16	9.07	25.24	26.94	118.80	116.82	33.74
13	77.97	79.68	51.04	228.82	47.64	12.48	28.92	16.45	18.43	107.18	84.21	53.31
14	81.66	121.07	44.80	189.41	59.26	10.77	16.73	19.28	15.59	82.23	77.12	49.90
15	106.04	128.16	43.38	165.31	64.08	9.92	15.59	57.56	19.56	72.02	69.75	54.16
16	256.61	97.54	42.53	142.91	59.26	8.79	12.19	19.28	13.61	68.33	76.84	66.35
17	202.17	77.97	48.49	125.61	49.34	7.66	11.63	15.59	13.04	66.63	81.38	75.99
18	143.47	55.57	49.05	117.67	38.56	7.09	12.19	14.18	149.43	59.83	60.39	86.76
19	114.83	30.62	45.93	123.62	33.74	27.22	18.15	11.63	34.31	53.02	68.62	87.61
20	72.87	39.13	43.10	136.38	37.14	28.92	10.49	11.06	22.97	49.34	48.77	88.47
21	52.17	21.83	49.90	155.10	239.88	15.31	11.06	20.70	19.00	56.99	55.86	47.64
22	38.85	23.82	73.72	169.84	80.24	11.63	10.77	20.70	15.88	64.65	223.43	47.07
23	42.25	28.92	101.51	243.00	55.29	30.34	8.22	13.89	15.03	56.71	132.70	100.66
24	37.99	28.64	104.91	162.47	77.97	41.40	28.92	10.77	13.89	53.31	86.20	135.82
25	37.14	33.46	130.15	121.64	138.09	58.61	15.31	9.36	12.48	51.89	74.86	121.07
26	36.86	41.96	119.09	121.36	66.35	20.70	13.04	8.79	17.58	51.04	77.41	102.64
27	44.23	41.96	237.04	147.44	43.38	13.61	16.45	8.22	34.03	46.50	49.05	88.47
28	47.64	39.98	309.34	151.98	30.34	10.49	14.74	7.94	33.46	60.96	50.19	80.24
29	73.15	-----	427.87	139.79	24.67	8.79	10.77	12.48	20.98	103.21	53.31	81.38
30	103.21	-----	475.50	222.86	22.12	8.22	9.64	17.58	18.15	65.21	53.59	91.30
31	81.94	-----	466.71	-----	21.27	-----	294.03	10.49	-----	249.52	-----	85.35
MEAN	76.84	51.60	104.34	242.15	82.23	17.58	20.98	21.55	23.25	111.43	99.24	73.15
INCHES	2.013	1.223	2.737	6.149	2.158	.450	.554	.565	.594	2.921	2.520	1.922
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0008665. RECORDS ARE EXCELLENT. SOME PERIODS OF WINTER RECORDS ARE ADJUSTED DUE TO ICE JAMS AT THE CONTROL SECTION.												





CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO

LOCATION: WATERSHED — Washita River above Anadarko, Okla.; Southwest Central Oklahoma and Texas Panhandle; in Caddo, Kiowa, Washita, Custer, Beckham, and Roger Mills Counties, Okla.; and Hemphill, Wheeler, and Gray Counties, Tex.; Washita River, Red River Basin.

GAGING STATION — NW¼ sec. 15, T. 7 N., R. 10 W., lat. 35°05', long. 98°14'; north edge of Anadarko, Okla., 35 feet upstream from U.S. Highway 281 bridge over Washita River; at river mile 305.2, approximately 8.1 miles upstream from confluence of Sugar Creek.

AREA: 2,340,000 acres (3,656 sq. miles). This is drainage area at inflow point to study reach.

SLOPES: 1/ Not applicable.

SOILS: 1/ Not applicable.

EROSION: 1/ Not applicable.

LAND CAPABILITY: 1/ Not applicable.

GEOLOGY: 1/ Not applicable.

SURFACE DRAINAGE: Good, length of principal waterway 321 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: **Precipitation:** Weather Bureau substations. No precipitation data are presented. **Runoff:** U.S.G.S. wire weight gage on bridge, datum 1,151.88 ft. m.s.l. elev., all datum by 1929 adjustment. Staff gage, datum 1,150.00 ft. m.s.l. elev., and Stevens A-35 water-level recorder installed in 30-inch well on left bank with 4.8 inch per day time scale, datum 1,150.00 ft. m.s.l. elev. Rock channel control - very insensitive at low flow. Low flow current meter measurements made by wading channel. High flow current meter measurements made by crane from upstream side of bridge. Measurements made periodically and during each major rise.

WATERSHED CONDITIONS: 1/ Not applicable.

GENERALLY REPRESENTS: Large rivers of the Central Great Plains, specifically the Central Rolling Red Plains land resource area (H-78).

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1961 P 2/ Q										.152	.256	.080				
1962 P 2/ Q	.065	.059	.061	.080	.143	.469	.092	.060	.216	.128	.066	.071	1.510			
STA AV P2/ Q3/										.140	.161	.076				
MEAN P 4/ 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-12	.0021	6-12	.0021	6-12	.0043	6-12	.013	6-12	.027	6-12	.051	6-11	.096	6-7	.257
MAXIMUMS FOR PERIOD OF RECORD 5/																
1961 TO 1962	6-12 1962	.0021	6-12 1962	.0021	6-12 1962	.0043	6-12 1962	.013	6-12 1962	.027	6-12 1962	.051	6-11 1962	.096	6-7 1962	.257

Notes: Quality of records: Q, good to excellent. Watershed conditions not applicable. For maps see pp. 69.7-7 and 9. 1/ Since this is the inflow station to the study reach, these data are not applicable. 2/ Since this is the inflow station to the study reach, the U.S. Weather Bureau substation precipitation data upstream are not presented. 3/ Runoff records began Oct. 1961. 4/ Mean P based on 62-yr (1901-62) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 5/ Period of record began Oct. 1961.

MISCELLANEOUS DATA

RUNOFF PEAK DATA: YEAR (1962): Maximum — June 12, 5,074 cfs (17.98 ft). Minimum — Aug. 31, 47 cfs (6.94 ft).

PERIOD OF RECORD: Maximum — June 12, 1962, 5,074 cfs (17.98 ft). Minimum — Aug. 31, 1962, 47 cfs (6.94 ft).

PEAK DISCHARGES: (Above base of 3,000 cfs) 1961 — Oct. 12, 3,364 cfs (14.05 ft); Nov. 5, 4,850 cfs (17.44 ft). 1962 — June 12, 5,074 cfs (17.98 ft); Sept. 21, 4,150 cfs (15.84 ft).

ABBREVIATED RATING TABLE: 1961 and 1962 (Stage recorder datum; gage height in ft, discharge in cfs).

GAUGE HEIGHT	DISCHARGE	GAUGE HEIGHT	DISCHARGE	GAUGE HEIGHT	DISCHARGE
5.3	0	10.0	1,600	15.0	3,780
7.1	100	11.0	2,080	16.0	4,250
7.5	275	12.0	2,500	17.0	4,750
8.0	650	13.0	2,930	18.0	5,230
9.0	1,100	14.0	3,350		

1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										247	401	267
2										224	*1020	267
3										* 200	*2810	267
4										185	*3820	267
5										172	*4270	267
6										164	*1930	264
7										154	892	253
8										146	648	243
9										151	* 562	243
10										205	503	243
11										*1920	476	243
12										*3180	407	243
13										1260	379	243
14										733	378	232
15										1850	393	<u>222</u>
16										* 908	499	253
17										419	729	267
18										340	719	*272
19										290	520	286
20										256	398	<u>293</u>
21										235	347	282
22										219	347	267
23										* 204	347	253
24										194	346	246
25										174	322	243
26										155	314	241
27										<u>137</u>	295	237
28										130	* 277	234
29										158	<u>267</u>	232
30										171	267	230
31										191	-----	228
MEAN										483	839	252
INCHES										*152	*256	*080
NOTES: RECORDS BEGAN OCT 1, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00001017. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 195,000. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												
1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	221	<u>215</u>	197	170	608	816	387	214	<u>74</u>	300	* 305	265
2	219	<u>211</u>	190	170	308	* 867	325	222	112	287	251	246
3	224	209	183	164	239	1170	295	<u>1010</u>	93	272	228	278
4	228	209	187	167	215	*1630	270	<u>830</u>	110	257	217	343
5	230	205	197	180	205	995	250	515	163	255	209	<u>368</u>
6	226	201	205	198	237	1310	237	332	219	267	203	309
7	231	201	208	205	216	2410	219	267	174	279	205	263
8	250	201	201	201	171	*2770	201	235	159	287	201	235
9	<u>255</u>	201	194	197	115	*2020	170	* 211	117	284	190	221
10	206	<u>201</u>	197	* 220	105	2840	142	187	* 739	250	187	215
11	120	<u>207</u>	201	362	103	*4320	125	159	448	226	180	209
12	131	<u>213</u>	197	271	100	*4970	118	134	260	211	170	201
13	184	<u>213</u>	190	279	100	*3370	112	116	184	205	<u>164</u>	*195
14	243	<u>213</u>	187	258	100	2530	107	103	139	194	* 167	201
15	232	<u>213</u>	187	212	100	*2100	105	100	219	* 183	170	208
16	235	<u>213</u>	187	177	103	1570	107	98	258	171	167	208
17	216	<u>213</u>	180	161	105	1880	112	94	202	<u>161</u>	174	208
18	215	<u>211</u>	<u>174</u>	161	* 103	*1470	116	90	*2080	161	183	209
19	209	<u>207</u>	* 184	<u>158</u>	98	837	<u>179</u>	89	*3580	161	190	207
20	115	* 203	203	158	98	680	<u>171</u>	85	*4000	181	197	205
21	<u>109</u>	<u>201</u>	<u>211</u>	164	98	581	<u>106</u>	80	*3090	1520	205	205
22	121	<u>201</u>	205	177	98	500	<u>100</u>	72	963	*2210	208	205
23	145	<u>201</u>	201	190	95	458	* 128	71	738	* 954	205	203
24	235	201	201	201	94	444	<u>142</u>	70	* 576	527	197	201
25	254	<u>199</u>	201	205	<u>90</u>	473	<u>134</u>	<u>69</u>	507	364	194	203
26	* 231	199	201	205	200	* 595	1120	69	455	298	201	203
27	224	201	201	215	*1610	787	*1680	69	423	267	209	*201
28	224	201	197	345	*2640	752	1000	69	391	280	* 209	201
29	226	-----	190	*1020	*2580	556	363	69	348	333	<u>504</u>	201
30	224	-----	183	<u>1070</u>	*1830	430	319	69	319	1030	369	199
31	219	-----	174	-----	*1250	-----	237	72	-----	644	-----	201
MEAN	206	206	194	262	452	1538	293	189	708	407	215	226
INCHES	*065	*059	*061	*080	*143	*469	*092	*060	*216	*128	*066	*071
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00001017. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 195,000. YEARLY MEAN DISCHARGE, 408 CFS. YEARLY DISCHARGE, 1.513 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN

LOCATION: WATERSHED — Washita River above Verden, Okla.; Southwest Central Okla. and Tex. Panhandle; in Caddo, Canadian, Kiowa, Washita, Custer, Beckham, and Roger Mills Counties, Okla.; and Hemphill, Wheeler, and Gray Counties, Tex.; Washita River; Red River Basin.

GAGING STATION — SW $\frac{1}{4}$ sec. 7, T. 7 N., R. 8 W., lat. 35°05', long. 98°05'; north edge of Verden, Okla., at county road bridge over Washita River; at river mile 283.4, approximately 8.4 miles upstream from confluence with Ionine Creek.

AREA: 2,613,000 acres (4,083 sq. miles). Local drainage area for reach between Anadarko and Verden gaging stations: 273,000 acres (426.3 sq. miles). See composite map, page 69.7-7.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	1/
	Percent of area	25	12	23	15	23	2	

SOILS: The alluvial soils are derived from alkaline red bed sediments, and the residual soils are derived from Rush Springs sandstone. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Darnell Quinlan Woodward sandy loams	35	6	Weak medium granular	Moderate	Weak fine crumb	Moderate	18	Slow	Slow
McLain Reinach Pulaski silt loams	25	14	Moderate fine granular	Moderate	Moderate fine crumb	Moderate	60	Moderate	Medium
Noble Daugherty Cobb fine sandy loams	25	10	Structureless fine granular	Rapid to moderate	Moderate medium prismatic	Moderate	48	Moderate	Medium
Noble Vanoss Cobb sandy loams	15	12	Moderate medium granular	Moderate	Moderate medium prismatic	Moderate	48	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	1/
	Percent of area	22	55	20	3	

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	1/
	Percent of area	18	18	23	12	3	23	3	

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations in area tributary to reach in percent are: Flood plain alluvium and terrace deposits, 14; Cloud Chief formation, 1; Rush Springs formation, 62; and Marlow, Dog Creek, and Blaine formations, 23. See description of hydrogeology and general geologic map, pp. 69.7-8 and 9.

SURFACE DRAINAGE: Good, length of principal waterway 343 miles; length of reach between Anadarko and Verden gaging stations 21.8 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: Precipitation: Above Anadarko, Weather Bureau substations exist, but no data are presented. Between Anadarko and Verden, one Weather Bureau substation plus recording weighing type gages installed on a 3-mile square grid. Grid pattern oriented in north northeast direction and consists of approximately 66 gages, all in operation. Time scales vary, but are primarily 24-hour. Runoff: Tape down from reference point on bridge, datum 1,100.00 ft.; all datum m.s.l. elev. by 1929 adjustment. Stevens A-35 water level recorder and bubble gage servomanometer on right bank with a 4.8-inch per day time scale. Gage height measured on upstream side of bridge, datum 1,100.00 ft. Sandy shifting channel control. Low flow current meter measurements made by wading channel; high flow current meter measurements made by crane from upstream side of bridge. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: Most of the bottom land of this area is farmed with a rotation of alfalfa, small grains, and cotton. The remainder is farmed to small grains, cotton, and sorghums. 90% of the farmed land with a slope greater than 1- $\frac{1}{2}$ % has needed structural practices such as terraces, farm ponds, and grassed waterways applied. There is some irrigated land in the area. Moldboard plowing which buries the crop residue is practiced by most farmers in the area. Spring-tooth or spike-tooth harrows are used to control weeds until the following crops are planted. Fertilization is based on soil test recommendations. There are approximately 4 farm ponds per sq. mile. The following table shows the land use.

Cultivation - 45						Percent of watershed in			
Percent of cultivated land in						Pasture or range - 44		Wooded pasture - 9	
Alfalfa - 20	Sowed crops - 32	Row crops - 48				Classification of range site condition based on production		Classification of range site condition based on production	
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	Exc. - 5%	Good - 10%	Good - 5%	Fair - 15%
4	40	35	40	50	600	Fair - 25%	Poor - 60%	Poor - 80%	
						The general practice for good range utilization is 1 animal unit per 12 acres.			

GENERALLY REPRESENTS: Large rivers of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Plains and Central Rolling Red Prairies, land resource areas (H-78 and H-80), with general application to the Cross Timbers land resource area (J-84) of the Southwestern Prairies Cotton and Forage Region.

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1961 P 1/ Q										1.95 .150	3.13 .257	.85 .096				
1962 P 1/ Q	.36 .075	.53 .055	.54 .051	2.66 .065	2.73 .132	8.32 .470	1.77 .095	1.39 .063	4.99 .199	2.48 .127	1.08 .064	1.26 .065	28.11 1.461			
STA AV 2/P Q										2.22 .138	2.10 .160	1.06 .080				
MEAN P 3/ 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-12	.0020	6-12	.0020	6-12	.0039	6-12	.012	6-12	.023	6-12	.046	6-11	.088	6-7	.259
MAXIMUMS FOR PERIOD OF RECORD 4/																
1961 TO 1962	6-12 1962	.0020	6-12 1962	.0020	6-12 1962	.0039	6-12 1962	.012	6-12 1962	.023	6-12 1962	.046	6-11 1962	.088	6-7 1962	.259
Notes: Quality of records: P, excellent; Q, excellent. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69,7-7 and 9. 1/ Precipitation data obtained from a Thiessen weighted average of 66 gages for the reach between stations at Anadarko and Verden. 2/ Precipitation and runoff records began Oct. 1961. 3/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Oct. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Maximum — June 12, 5,161 cfs (25.36 ft). Minimum — Aug. 30, 58 cfs (8.54 ft). PERIOD OF RECORD: Maximum — June 12, 1962, 5,161 cfs (25.36 ft). Minimum — Aug. 30, 1962, 58 cfs (8.54 ft).																
PEAK DISCHARGES: (Above base of 3,000 cfs) 1961 — Oct. 12, 3,008 cfs (19.41 ft); Nov. 5, 4,786 cfs (23.66 ft). 1962 — June 12, 5,161 cfs (25.36 ft); Sept. 21, 4,060 cfs (21.95 ft).																
ABBREVIATED RATING TABLE: 1961 and 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																
Jan. 1 — June 1, 1962				June 1 — Dec. 31, 1962												
GAGE HEIGHT		DISCHARGE		DISCHARGE		GAGE HEIGHT		DISCHARGE		GAGE HEIGHT		DISCHARGE				
6.3		0				15.0		1,600								
8.5		100		58		17.0		2,300								
9.5		218		190		19.0		3,000								
10.5		340		340		21.0		3,700								
11.5		550		550		23.0		4,220								
13.0		890		890		25.0		5,060								

1961 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA				WATERSHED 200 AT VERDEN			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1										.01	1.12	.00	
2										.03	.70	.00	
3										.00	.00	.00	
4										.00	.00	.08	
5										.00	.00	.00	
6										.00	.00	.00	
7										.00	.00	.00	
8										.00	.00	.44	
9										.89	.00	.00	
10										.37	.02	.00	
11										.00	.00	.00	
12										.00	.00	.00	
13										.10	.05	.00	
14										.00	.17	.00	
15										.01	.74	.00	
16										.00	.00	.32	
17										.00	.00	.01	
18										.00	.00	.00	
19										.00	.00	.00	
20										.00	.00	.00	
21										.00	.26	.00	
22										.00	.07	.00	
23										.00	.00	.00	
24										.00	.00	.00	
25										.00	.00	.00	
26										.00	.00	.00	
27										.00	.00	.00	
28										.00	.00	.00	
29										.07	.00	.00	
30										.45	.00	.00	
31										.02		.00	
TOTAL										1.95	3.13	.85	
STA AV													
NOTES: RECORDS BEGAN OCT 1, 1961. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 66 GAGES ON THE REACH BETWEEN STATION 100 AND 200.													

1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA				WATERSHED 200 AT VERDEN			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1										325	280	*362	
2										295	*1090	357	
3										* 267	*2020	354	
4										246	*3330	356	
5										231	*4390	357	
6										220	*3020	349	
7										205	1160	343	
8										* 195	847	341	
9										202	* 699	350	
10										258	630	359	
11										* 871	596	349	
12										*3000	561	341	
13										*1860	523	*326	
14										* 782	498	334	
15										*1620	703	E 325	
16										*1240	* 639	349	
17										670	722	394	
18										463	937	381	
19										382	728	372	
20										351	569	365	
21										328	509	359	
22										306	507	359	
23										* 282	470	345	
24										263	445	328	
25									1090	249	431	315	
26									*2460	236	421	312	
27									*1190	226	400	*305	
28									599	226	* 386	297	
29									* 427	224	377	293	
30									358	225	370	297	
31										240		294	
MEAN										532	942	341	
INCHES										.150	.257	.096	
NOTES: RECORDS BEGAN SEPT 25, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000009109. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 217,700. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.													

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA			WATERSHED 200 AT VERDEN			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	.04	.00	.51	.00	.00	.00	.09
2	.00	.00	.00	.00	.00	.05	.00	.00	.07	.00	.00	1.00
3	.00	.00	.00	.00	.00	.01	.00	.00	1.12	.00	.00	.03
4	.10	.00	.00	.12	.22	.06	.00	.01	.34	.00	.00	.00
5	.00	.00	.00	.11	.00	1.00	.00	.00	.07	.71	.00	.00
6	.00	.00	.00	.14	.00	.02	.00	.00	.03	.00	.12	.00
7	.00	.00	.00	.00	.00	.47	.00	.00	.50	.00	.01	.00
8	.00	.00	.00	.00	.00	.02	.00	.00	.24	.00	.00	.00
9	.00	.00	.00	.00	.00	1.24	.08	.00	.00	.00	.00	.00
10	.00	.00	.00	.73	.00	.05	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.62	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
14	.08	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.02	.00	.00	.00	.08	.01	.00	1.91	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.05	.00	.01	.00	.00	.00
17	.00	.00	.00	.01	.00	.00	.00	.00	.00	.17	.35	.00
18	.00	.00	.00	.00	.00	.38	.09	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.01	.00	.00	.01	.30	.00	.00
20	.00	.04	.47	.01	.06	.00	.01	.00	.56	.52	.00	.00
21	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.02	.00	.50	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.03	.00	.00	.25	.00	.00	.00	.00	.00
24	.00	.00	.05	.11	.06	.04	.57	.14	.00	.00	.00	.08
25	.13	.02	.02	.00	.49	.40	.43	.00	.12	.00	.00	.05
26	.00	.00	.00	.12	1.16	.22	.00	.00	.00	.00	.60	.00
27	.00	.20	.00	1.25	.00	.02	.01	.00	.00	.26	.00	.00
28	.00	.00	.00	.01	.74	.00	.26	.00	.00	.52	.00	.01
29	.00	-----	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.01	.00	.01	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.71	-----	.00	-----	.00
TOTAL	.36	.53	.54	2.66	2.73	8.32	1.77	1.39	4.99	2.48	1.08	1.26
STA AV										2.22	2.10	1.06
NOTES: YEARLY PRECIPITATION 28.11 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 66 GAGES ON THE REACH BETWEEN STATIONS 100 AND 200.												

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA			WATERSHED 200 AT VERDEN			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	277	<u>256</u>	195	152	759	979	465	279	<u>90</u>	360	431	298
2	262	* 247	* 195	148	380	*1760	E 390	260	117	342	303	266
3	259	241	194	* <u>148</u>	* 300	1450	E 345	704	146	324	266	320
4	260	238	193	157	251	*1830	E 322	<u>975</u>	290	306	247	329
5	261	234	192	164	226	1200	301	693	185	294	235	<u>370</u>
6	268	227	193	167	204	*1310	289	451	230	309	229	336
7	<u>280</u>	226	194	168	290	*2290	275	* 336	222	317	226	293
8	<u>268</u>	222	193	174	155	*3180	256	295	232	* 312	221	259
9	<u>255</u>	219	193	183	172	*2610	243	260	197	324	218	248
10	260	218	191	243	161	3410	* 235	233	* 368	305	214	230
11	267	216	186	307	149	*4220	214	210	* 353	276	211	218
12	267	214	182	316	133	<u>5070</u>	200	194	372	253	205	207
13	266	210	181	* 263	130	*4210	183	170	253	240	199	*197
14	264	210	180	253	* 125	*2780	170	158	184	235	* 196	201
15	262	219	181	218	121	2070	163	147	234	226	193	202
16	* 260	218	180	185	117	1620	156	135	432	216	191	197
17	258	214	179	171	115	1780	160	128	277	<u>209</u>	<u>190</u>	197
18	261	210	178	156	113	*1530	172	119	* 999	209	199	201
19	264	205	* 177	161	110	951	178	126	*3350	209	202	205
20	266	* 201	177	170	108	779	237	112	<u>3890</u>	239	204	204
21	267	201	* <u>198</u>	154	107	889	180	105	*3740	735	207	201
22	270	201	193	151	104	764	148	96	*1380	* <u>2310</u>	208	201
23	272	200	185	153	100	529	<u>143</u>	90	791	*1260	206	199
24	274	199	173	156	98	<u>447</u>	190	* 89	* 638	655	201	195
25	275	198	173	162	* <u>92</u>	484	246	83	582	449	196	201
26	277	198	172	163	120	* 679	* 451	79	530	370	207	199
27	280	197	167	220	*1070	732	* <u>1660</u>	78	482	324	227	* <u>194</u>
28	278	<u>195</u>	167	359	*2570	829	*1260	78	443	333	* 219	204
29	274	-----	164	* 769	* <u>2760</u>	699	563	78	413	367	304	204
30	272	-----	160	* <u>986</u>	*2030	540	366	77	385	* 781	<u>435</u>	199
31	<u>266</u>	-----	<u>157</u>	-----	*1350	-----	323	79	-----	* 874	-----	195
MEAN	267	216	182	239	468	1721	338	223	727	450	233	231
INCHES	.075	.055	.051	.065	.132	.470	.095	.063	.199	.127	.064	.065
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000009109. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 217,700. YEARLY MEAN DISCHARGE, 440 CFS. YEARLY DISCHARGE, 1.461 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

CHICKASHA, OKLAHOMA WATERSHED 400 NEAR CHICKASHA

LOCATION: WATERSHED — Washita River above Chickasha, Okla.; Southwest Central Oklahoma and Texas Panhandle; in Grady, Caddo, Canadian, Kiowa, Washita, Custer, Beckham, and Roger Mills Counties, Okla.; and Hemphill, Wheeler, and Gray Counties, Tex.; Washita River, Red River Basin.

GAGING STATION — SE $\frac{1}{4}$ sec. 9, T. 7 N., R. 7 W., lat. 35°05', long. 97°56'; 2-3/4 miles north of Chickasha, Okla., at county road bridge over Washita River (4th St. extended); at river mile 262.2, approximately 4.3 miles upstream from confluence of Line Creek.

AREA: 2,726,000 acres (4,259 sq. miles). Local drainage area for reach between Verden and Chickasha gaging stations: 112,910 acres (176.4 sq. miles). See composite map, page 69.7-7.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
	Percent of area	20	15	10	20	33	2	1/

SOILS: Residual, derived from siltstone, shale, sandstone, and terrace and flood plain alluvium: 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Kingfisher-Grant Stephenville silt loams	50	16	Moderate fine granular	Moderate	Moderate medium subangular blocky	Moderate	30	Moderate	Medium
Kirkland-Renfrow silt loams	23	14	Moderate fine granular	Moderate	Strong medium blocky	Very slow	34	Moderately slow	Very slow
Reinach-McLain silt clay loams	20	20	Moderate fine granular	Moderate	Moderate medium subangular blocky	Moderate	45	Moderate	Medium
Teller-Vanoss silt loams	7	16	Moderate fine granular	Moderate	Moderate fine granular	Moderate	40	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	
	Percent of area	20	30	49	1	1/

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	
	Percent of area	10	13	30	10	2	35	0	1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations in area tributary to reach, in percent are: Recent flood plain alluvium and terrace deposits, 21; Rush Springs formation, 2; Marlow, Dog Creek, and Blaine formations, 57; and Chickasha formation, 20. See description of hydrogeology and general geology map, pages 69.7-8 and 9.

SURFACE DRAINAGE: Good, length of principal waterway 364 miles; length of reach between Verden and Chickasha gaging stations 21.2 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: Precipitation: Above Anadarko, Weather Bureau substations exist, but no data are presented. Between Anadarko and Verden see description for watershed 200. Between Verden and Chickasha (4th St.), 3 Weather Bureau substations plus recording weighing type gages installed on 3-mile square grid. Grid pattern oriented in north northeast direction and consists of approximately 33 gages, all in operation. Time scales vary but are primarily 24-hr. Runoff: Tape down from reference point on bridge, datum 1,060.00 ft.; all datum m.s.l. elev., by 1929 adjustment. Stevens A-35 water-level recorder and bubble gage servo-manometer on right bank with a 4.8 inches per day time scale. Gage height measured on upstream side of bridge, datum 1,060.00 ft. Sandy but stable channel control. Low flow current meter measurements made by wading channel. High flow current meter measurements made by crane from upstream side of bridge. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: Approximately 25% of this area is farmed with a rotation of alfalfa, small grains, and cotton. The remainder is farmed to small grains, cotton, and sorghums. 95% of the farmed land with a slope greater than 1-1/2% has needed structural practices such as terraces, farm ponds, and grassed waterways applied. There is some irrigated land in the area. Moldboard plowing which buries the crop residue is practiced by most farmers of the area. Spring-tooth or spike-tooth harrows are used to control weeds until the following crops are planted. Fertilization is based on soil test recommendations. There are approximately 5 farm ponds per sq. mile. The following table shows the land use:

Percent of watershed in									
Cultivation - 54					Pasture or range - 43		Wooded pasture - 1		Miscellaneous - 2
Percent of cultivated land in					Classification of range site condition based on production		Classification of range site condition based on production		Farmsteads, roads, airports, etc.
Alfalfa - 20	Sowed crops - 52	Row crops - 28							
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	Exc. - 0%	Good - 20%	Fair - 50%	Good - 30%
4.5	33	42	45	35	310	Fair - 66%	Poor - 14%	Poor - 20%	
The general practice for good range utilization is 1-1/2 animal units per 10 acres.									

GENERALLY REPRESENTS: Large rivers of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Plains and Central Rolling Red Prairies, Land resource areas (H-78 and H-80), with general application to the Cross Timbers land resource area (J-84) of the Southwestern Prairies Cotton and Forage Region.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 400 NEAR CHICKASHA										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1961 P <u>1/</u> Q										1.85 .143	3.76 .247	.97 .093				
1962 P <u>1/</u>	.34 .078	.83 .060	.71 .056	2.61 .069	2.60 .130	8.05 .494	1.39 .089	1.61 .058	3.90 .179	2.01 .111	1.47 .065	1.32 .067	26.84 1.456			
STA AV <u>2/</u> P Q										1.93 .127	2.62 .156	1.14 .080				
MEAN P <u>3/</u> 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	6-2	.0022	6-2	.0022	6-2	.0044	6-2	.013	6-2	.025	6-13	.043	6-13	.080	6-8	.245
MAXIMUMS FOR PERIOD OF RECORD <u>4/</u>																
1961 TO 1962	6-2 1962	.0022	6-2 1962	.0022	6-2 1962	.0044	6-2 1962	.013	6-2 1962	.025	6-13 1962	.043	6-13 1962	.080	6-8 1962	.245
Notes: Quality of records: P, excellent; Q, excellent. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.7-7 and 9. <u>1/</u> Precipitation data obtained from a Thiessen weighted average of 33 gages for the reach between stations at Verden and Chickasha (4th St.). <u>2/</u> Precipitation and runoff records began Oct. 1961. <u>3/</u> Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. <u>4/</u> Period of record began Oct. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Maximum — June 2, 5,998 cfs (26.20 ft). Minimum — Aug. 30, 70 cfs (8.72 ft). PERIOD OF RECORD: Maximum — June 2, 1962, 5,998 cfs (26.20 ft). Minimum — Aug. 30, 1962, 70 cfs (8.72 ft).																
PEAK DISCHARGES: (Above base of 3,000 cfs) 1961 — Nov. 6, 4,275 cfs (23.53 ft). 1962 — June 2, 5,998 cfs (26.20 ft); June 13, 5,053 cfs (24.41 ft); Sept. 21, 3,890 cfs (21.64 ft).																
ABBREVIATED RATING TABLE: 1961 and 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																
GAGE HEIGHT		DISCHARGE		GAGE HEIGHT		DISCHARGE		DISCHARGE (June 10-14, 1962)								
6.3		0		16.0		1,720										
10.3		268		18.0		2,370										
11.0		380		20.0		3,100		2,940								
12.0		618		22.0		3,980		3,570								
13.0		810		24.0		4,780		4,470								
14.0		1,060		26.0		5,970										

1961 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA				WATERSHED 400 NEAR CHICKASHA			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1										.01	1.37	.00	
2										.05	.97	.00	
3										.00	.00	.00	
4										.00	.00	.10	
5										.00	.00	.00	
6										.00	.00	.00	
7										.00	.00	.00	
8										.00	.00	.47	
9										1.22	.00	.00	
10										.27	.02	.00	
11										.00	.00	.00	
12										.00	.00	.00	
13										.05	.12	.00	
14										.02	.13	.00	
15										.00	.72	.00	
16										.00	.00	.37	
17										.00	.00	.03	
18										.00	.00	.00	
19										.00	.00	.00	
20										.00	.00	.00	
21										.00	.32	.00	
22										.00	.11	.00	
23										.00	.00	.00	
24										.00	.00	.00	
25										.01	.00	.00	
26										.00	.00	.00	
27										.00	.00	.00	
28										.00	.00	.00	
29										.05	.00	.00	
30										.15	.00	.00	
31										.02		.00	
TOTAL										1.85	3.76	.97	
STA AV													
NOTES: RECORDS BEGAN OCT 1, 1961. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 33 GAGES ON THE REACH BETWEEN STATION 200 AND 400.													

1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA				WATERSHED 400 NEAR CHICKASHA			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1										359	255	368	
2										* 319	*1780	362	
3										296	*1640	361	
4										277	*2830	360	
5										259	*3670	359	
6										244	*3830	358	
7										237	*1500	356	
8										228	942	354	
9										266	716	354	
10										430	630	357	
11										374	579	352	
12										*2140	533	337	
13										*2280	490	*324	
14										* 944	475	326	
15										1180	620	327	
16										*1460	* 630	374	
17										823	634	408	
18										520	826	396	
19										* 424	733	374	
20									* 601	372	571	362	
21									574	341	531	357	
22									469	316	518	351	
23									389	296	486	337	
24									331	280	451	322	
25									*1110	267	435	314	
26									*2500	256	423	313	
27									1590	243	410	*308	
28									* 741	242	* 392	300	
29									493	241	381	295	
30									405	239	375	292	
31										* 242		292	
MEAN										529	943	344	
INCHES										.143	.247	.093	
NOTES: RECORDS BEGAN SEPT 20, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000008731. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 227.200. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.													

1962 DAILY PRECIPITATION (inches)					CHICKASHA, OKLAHOMA		WATERSHED 400 NEAR CHICKASHA					
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	3.52	.00	.39	.00	.00	.00	.03
2	.00	.00	.00	.00	.00	.22	.00	.00	.02	.00	.00	1.11
3	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00	.00	.00
4	.13	.00	.00	.08	.08	.02	.00	.07	.82	.00	.00	.00
5	.00	.00	.00	.07	.00	.86	.00	.00	.00	.56	.00	.00
6	.00	.00	.00	.11	.00	.05	.00	.00	.03	.00	.28	.00
7	.00	.00	.00	.00	.00	.37	.00	.00	.50	.00	.03	.00
8	.00	.00	.00	.00	.00	.04	.00	.00	.19	.00	.00	.00
9	.00	.00	.00	.00	.00	1.08	.01	.00	.00	.00	.00	.00
10	.00	.00	.00	1.05	.00	.01	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.08	.28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.14	.00	.00	.00	.01	.01	.00	1.05	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.01	.00	.00	.20	.28	.00
18	.00	.00	.00	.00	.00	.22	.01	.00	.00	.01	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00
20	.00	.05	.63	.00	.05	.00	.00	.00	.86	.28	.00	.00
21	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.54	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.08	.09	.13	.00	.39	.02	.00	.00	.00	.11
25	.09	.02	.00	.00	.35	.37	.27	.00	.16	.00	.00	.05
26	.00	.00	.00	.01	1.21	.27	.00	.00	.00	.00	.88	.00
27	.00	.34	.00	1.17	.05	.01	.04	.00	.00	.15	.00	.00
28	.00	.00	.00	.01	.73	.00	.62	.00	.00	.73	.00	.02
29	.00	-----	.00	.00	.00	.30	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	1.13	-----	.00	-----	.00
TOTAL	.34	.83	.71	2.61	2.60	8.05	1.39	1.61	3.90	2.01	1.47	1.32
STA AV										1.93	2.62	1.14
NOTES: YEARLY PRECIPITATION 26.84 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 33 GAGES ON THE REACH BETWEEN STATIONS 200 AND 400.												

1962 MEAN DAILY DISCHARGE (cfs)					CHICKASHA, OKLAHOMA		WATERSHED 400 NEAR CHICKASHA					
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	294	292	216	176	982	*2070	490	289	153	333	547	366
2	294	* 281	211	171	688	*4070	438	258	99	314	343	300
3	292	273	208	* 170	401	1630	378	312	138	297	289	426
4	294	266	211	169	273	1650	339	949	200	281	264	347
5	296	259	215	174	248	1550	310	715	267	269	251	354
6	295	253	213	188	238	*1490	286	492	175	272	245	373
7	292	248	218	195	187	2050	266	* 359	228	278	247	323
8	303	246	218	199	231	*2870	252	297	226	* 278	245	287
9	295	246	* 217	194	153	*3520	237	258	199	283	228	259
10	274	E 245	213	* 437	276	3020	* 229	225	163	289	224	*240
11	259	E 243	208	394	177	3770	213	199	* 571	265	225	232
12	262	E 244	206	362	163	*4610	198	184	418	245	221	220
13	281	E 245	204	287	153	*4880	186	173	277	230	215	208
14	285	E 244	200	282	* 145	3170	178	161	204	221	210	208
15	* 287	E 248	198	263	135	*2200	170	151	224	211	* 209	205
16	288	E 252	198	225	132	1850	164	141	374	202	209	205
17	288	E 250	200	204	127	1630	160	133	311	195	205	208
18	282	E 242	198	193	124	*1740	161	126	280	193	206	208
19	279	E* 237	196	191	122	1210	168	119	*2430	193	213	202
20	287	E 239	229	189	119	861	183	116	*3540	199	214	200
21	291	E 237	* 232	178	116	819	200	113	*3720	252	215	207
22	291	E 231	219	172	113	894	160	* 106	*2030	*1820	217	208
23	291	E 229	213	171	111	633	145	101	908	E *1560	218	207
24	291	E 226	203	* 173	107	501	150	94	* 669	767	215	204
25	291	E 223	199	174	104	474	204	88	564	510	211	204
26	291	E 219	198	188	111	574	* 214	86	510	402	217	*204
27	303	E 221	194	218	* 572	711	*1190	84	455	345	* 246	199
28	312	218	189	* 530	*1930	* 813	1400	82	415	327	239	200
29	304	-----	185	458	*2760	* 750	762	81	387	338	226	208
30	299	-----	177	* 948	*2300	597	409	81	359	470	423	207
31	299	-----	176	-----	*1540	-----	353	84	-----	* 928	-----	199
MEAN	290	245	205	262	479	1887	329	215	683	412	248	246
INCHES	.078	.060	.056	.069	.130	.494	.089	.058	.179	.111	.065	.067
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00008731. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 227,200. YEARLY MEAN DISCHARGE, 457 CFS. YEARLY DISCHARGE, 1.456 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX

LOCATION: WATERSHED — Washita River Watershed above Alex, Okla., Southwest Central Oklahoma and Texas Panhandle; in Grady, Caddo, Canadian, Kiowa, Washita, Custer, Beckham, and Roger Mills Counties, Okla.; and Hemphill, Wheeler, and Gray Counties, Tex.; Washita River, Red River Basin.

GAGING STATION — NW¼ sec. 7, T. 5 N., R. 5 W., lat. 34°55', long. 97°46', 1 mile north of Alex, Okla.; at county road bridge over Washita River at river mile 226.5 approximately 3.8 miles downstream from confluence of Winter Creek.

AREA: 3,064,000 acres (4,787 sq. miles). Local drainage area for reach between Tabler and Alex gaging stations: 50,830 acres (79.4 sq. miles). See composite map on page 69.7-7.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	1/
	Percent of area	30	20	30	10	6	4	

SOILS: Residual, derived from sandstone and shale materials. Gently rolling to strongly rolling alluvial terraces and bottom lands. 1/

Soil	Per- cent of area	Topsoil		Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	
Stephenville-Cobb Nash-Quinlan loams	40	10	Moderate fine granular	Moderate	Moderate fine subangular blocky	Moderate	28	Medium
Reinach-McLain Port-Yahola Norwood silt loams	30	18	Moderate fine granular	Moderate	Moderate medium granular	Moderate	40	Medium
Chickasha-Kingfisher silt loams	25	14	Moderate fine granular	Moderate	Moderate fine subangular blocky	Moderate	40	Medium
Kirkland-Renfrow silt loams	5	10	Moderate fine granular	Moderate	Strong medium blocky	Very slow	36	Very slow

EROSION:	Erosion class	1	2	3	4	1/
	Percent of area	20	20	30	30	

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	1/
	Percent of area	21	10	30	15	3	20	1	

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations in area tributary to reach, in percent are: Alluvium, 17.9; Cloud Chief, 0.0; Rush Springs, 0.0; Marlow, Dog Creek and Blaine, 3.2; and Chickasha, 78.9. See description of hydrogeology and general geology map on pages 69.7-8 and 9.

SURFACE DRAINAGE: Good, length of principal waterway 399 miles.

CHARACTER OF FLOW: Perennial continuous.

INSTRUMENTATION: Precipitation: Above Anadarko, Weather Bureau substations exist but no data are presented. Between Anadarko and Chickasha (4th St.), see descriptions for watersheds 200 and 400, pages 69.2-1 and 69.4-1. Between Chickasha (4th St.) and Chickasha (Turnpike) see description for watershed 500 in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1964, USDA Misc. Pub., p 69.5-1. Between Chickasha (Turnpike) and Tabler see description for watershed 600 in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1963, USDA Misc. Pub., p 69.6-1. Between Tabler and Alex, 1 Weather Bureau substation plus recording weighing type gages installed on 3-mile square grid. Grid pattern oriented in north northeast direction and consists of approximately 21 gages, all in operation with various time scales, (primarily 24-hr). See footnotes under monthly and daily tables for more specific information. Runoff: Staff gage on north pier of bridge, datum 1,000 ft.; all datum m.s.l. elev.; by 1929 adjustment. Stevens A-35 water-level recorder and bubble gage servo-manometer on left bank with 4.8 inch per day time scale. Gage height measured under bridge, datum 1,000 ft. Sandy shifting channel control, very unstable. Low flow current meter measurements made by wading channel. High flow current meter measurements made by crane from upstream side of bridge and from cableway across flood plain. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: Approximately 50% of the cropland is farmed to small grains, alfalfa, and cotton rotation. The remainder is farmed to small grains, cotton, and sorghums. Approximately 90% of the Class III land has structural conservation practices such as terraces, farm ponds, and grassed waterways applied. There are some irrigated farms on the bottomland areas. Moldboard plowing which buries the crop residue is practiced by most farmers of the area. Spring tooth or spike tooth harrows are used to control weeds until the following crops are planted. Fertilizer is applied according to needs shown by soil analysis. There are approximately three farm ponds per sq. mile. The following table shows the land use:

Percent of watershed in										
Cultivation - 55						Pasture or range - 42		Wooded pasture - 1		Miscellaneous - 2
Percent of cultivated land in						Classification of range site condition based on production		Classification of range site condition based on production		Farmsteads, roads, airports, etc.
Alfalfa - 20		Sowed crops - 50		Row crops - 30						
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	Good - 16% Fair - 75% Poor - 9%	Good - 36% Fair - 54% Poor - 10%			
4.5	30	40	45	30	290	The general practice for good range utilization is 1 animal unit per 10 acres.				

GENERALLY REPRESENTS: Large rivers of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Plains and Central Rolling Red Prairies, land resource areas (H-78 and H-80), with general application to the Cross Timbers land resource area (J-84) of the Southwestern Prairies Cotton and Forage Region.

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1961 P 1/ Q										1.97 .150	3.81 .266	1.17 .103	
1962 P 1/ Q	.40 .083	1.02 .073	1.09 .070	2.12 .080	2.67 .131	7.37 .525	2.29 .102	1.06 .063	5.81 .204	2.74 .112	1.45 .070	1.20 .085	29.22 1.598
STA AV 2/P Q										.131	.168	.094	
MEAN P 3/ 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-20	.0032	9-20	.0032	9-20	.0063	9-20	.019	9-20	.035	9-20	.057	9-20	.097	6-8	.240

MAXIMUMS FOR PERIOD OF RECORD 4/																
1961 TO 1962	9-20 1962	.0032	9-20 1962	.0032	9-20 1962	.0063	9-20 1962	.019	9-20 1962	.035	9-20 1962	.057	9-20 1962	.097	6-8 1962	.240

Notes: Quality of records: P, excellent; Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.7-7 and 9. 1/ Precipitation data based on a Thiessen weighted average of 81 gages on the reach between Chickasha (4th St.) and Alex prior to March 20, 1962; after March, 84 gages on the same reach. 2/ Precipitation records began Oct. 1961, however since the reach lengths reported are not yet fixed, no averages are shown; runoff records began Oct. 1961. 3/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Oct. 1961.

MISCELLANEOUS DATA			
<u>RUNOFF PEAK DATA</u> : YEAR (1962): Maximum — Sept. 20, 9,750 cfs (16.18 ft). Minimum — Aug. 29, 93 cfs (4.43 ft). PERIOD OF RECORD: Maximum — Sept. 20, 1962, 9,750 cfs (16.18 ft). Minimum — Aug. 29, 1962, 93 cfs (4.43 ft).			
PEAK DISCHARGES: (Above base of 3,000 cfs) 1961, 1962 — Sept. 13, 1961, 5,037 cfs (11.85 ft); Nov. 6, 1961, 4,339 cfs (11.07 ft); June 2, 1962, 6,911 cfs (13.40 ft); June 6, 1962, 5,472 cfs (12.80 ft); Sept. 20, 1962, 9,750 cfs (16.18 ft).			
<u>ABBREVIATED RATING TABLE</u> : 1962 (Stage recorder datum; gage height in ft, discharge in cfs).			
<u>GAGE HEIGHT</u>	Jan. 1 - June 1 <u>DISCHARGE</u>	June 1 - Oct. 1 <u>DISCHARGE</u>	Oct. 1 - Dec. 1 <u>DISCHARGE</u>
2.8	0		
4.0	178		
5.0	419	210	340
6.0	910	600	680
7.0	1,640	1,100	
8.0	1,960		
10.0	3,400		
12.0	5,200		
14.0	6,900		
16.0	9,200		

CLIMATOLOGICAL DATA APPLICABLE TO ENTIRE EXPERIMENTAL WATERSHED
(ANADARKO TO ALEX)

1961 DAILY AIR TEMPERATURE (degrees F)											CHICKASHA, OKLAHOMA CHICKASHA EXPERIMENT STATION														
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	49	22	50	34	64	27	63	30	80	58	91	70	89	67	94	74	94	74	68	43	72	55	67	40	
2	45	25	59	30	73	41	73	40	69	37	91	71	89	69	94	70	94	74	68	49	72	52	58	40	
3	48	21	52	19	81	52	73	50	69	59	85	63	86	63	91	72	93	60	68	39	52	28	67	45	
4	54	29	42	24	81	59	80	42	76	57	81	62	89	61	92	70	65	54	68	47	59	33	67	48	
5	51	32	42	29	79	50	80	42	82	57	83	62	92	71	95	68	82	55	65	48	59	34	50	34	
6	51	23	30	25	78	35	59	33	83	54	83	64	95	72	94	67	87	62	72	51	43	30	50	31	
7	45	30	32	24	74	43	63	45	83	68	81	62	95	70	88	66	87	69	76	56	59	28	47	34	
8	45	26	34	20	65	37	63	40	83	54	82	65	85	68	93	65	86	70	86	63	52	28	47	34	
9	50	18	47	18	59	27	51	38	75	44	87	63	85	72	93	70	86	69	76	64	65	33	48	36	
10	57	29	64	27	67	33	65	31	75	50	87	64	83	54	91	73	87	66	75	64	64	45	44	20	
11	56	24	77	38	73	42	73	38	82	57	88	65	83	60	91	74	87	70	85	47	69	51	22	19	
12	55	29	79	46	70	54	57	30	85	61	88	68	85	67	91	69	86	71	86	66	71	51	20	8	
13	55	31	69	43	66	40	75	34	85	65	84	73	89	63	88	72	71	59	81	62	71	40	30	6	
14	52	36	68	30	77	30	75	47	83	57	83	64	89	65	88	70	66	47	72	47	44	38	41	26	
15	54	26	68	37	79	53	69	37	75	44	79	64	84	72	85	70	70	45	73	44	48	43	38	30	
16	59	24	72	46	79	46	59	28	80	48	71	60	94	70	86	70	74	49	73	48	45	37	45	31	
17	61	29	72	54	65	44	68	40	85	67	70	59	92	65	87	69	74	52	73	49	45	25	44	31	
18	61	26	72	28	64	32	80	41	85	64	70	60	94	79	87	68	76	52	73	49	48	35	38	33	
19	49	24	52	26	46	36	87	60	79	65	79	64	94	73	87	70	76	54	70	40	48	35	38	26	
20	46	18	43	34	40	30	88	69	79	61	80	59	94	72	85	67	79	59	68	36	50	34	50	21	
21	42	8	41	37	59	30	88	69	87	65	85	52	92	67	85	62	85	69	72	49	51	45	59	25	
22	54	25	59	40	60	35	86	65	87	58	93	63	81	67	81	64	85	70	77	52	51	41	51	39	
23	64	22	56	42	65	32	86	67	77	55	89	67	87	67	69	56	86	72	77	52	67	28	39	29	
24	49	15	50	31	70	40	86	65	73	56	79	57	89	71	82	53	86	62	80	44	65	34	40	20	
25	24	13	70	26	70	52	86	53	80	60	82	67	89	72	80	69	67	47	80	53	69	49	61	27	
26	27	14	66	41	79	51	67	41	80	55	82	64	90	69	87	59	82	52	62	31	73	53	56	35	
27	27	13	63	36	76	43	77	37	74	40	87	65	91	69	88	60	82	62	67	45	62	37	41	25	
28	33	12	55	22	69	45	76	50	82	55	91	71	91	70	90	63	69	56	75	65	37	36	36	21	
29	42	14	---	---	69	39	87	41	90	60	91	70	91	69	90	62	84	63	75	68	37	25	40	16	
30	56	20	---	---	42	38	81	63	90	65	91	71	90	70	88	64	84	59	72	54	51	37	56	19	
31	56	26	---	---	53	36	---	---	90	65	---	---	---	---	89	71	89	65	---	---	---	---	---	48	29
AV.	49	23	57	32	67	40	74	46	81	57	84	64	89	68	88	67	81	61	74	51	57	38	46	28	
MEAN	35.8		44.5		53.6		59.8		68.8		74.0		78.7		77.4		70.9		62.2		47.3		37.4		
STA AV	50	26	56	31	63	36	75	48	81	58	90	67	94	70	94	69	87	61	75	50	62	36	53	29	

NOTES: TEMPERATURE DATA ARE BASED ON CHICKASHA EXPERIMENT STATION RECORDS PUBLISHED IN U. S. WEATHER BUREAU CLIMATOLOGICAL DATA FOR OKLAHOMA, VOL. 70. STATION AVERAGE BASED ON RECORDS FROM JUNE 1953 THROUGH DEC. 1961.

1961 MONTHLY EVAPORATION AND WIND

MONTH	EVAPORATION (INCHES)	TOTAL WIND (MILES)
APRIL	8.05	3588
MAY	8.38	3017
JUNE	8.66	1647
JULY	10.29	754
AUGUST	7.79	---
SEPTEMBER	6.90	---
OCTOBER	5.37	---

EVAPORATION DATA ARE BASED ON CHICKASHA EXPERIMENT STATION RECORDS PUBLISHED IN U. S. WEATHER BUREAU CLIMATOLOGICAL DATA FOR OKLAHOMA, VOL. 70.

CLIMATOLOGICAL DATA APPLICABLE TO ENTIRE EXPERIMENTAL WATERSHED
(ANADARKO TO ALEX)

1962 DAILY AIR TEMPERATURE (degrees F)												CHICKASHA, OKLAHOMA												CHICKASHA EXPERIMENT STATION											
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC												
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN											
1	44	20	66	29	35	10	63	40	71	44	83	61	86	69	88	68	85	68	67	46	65	43	62	54											
2	55	22	67	27	51	20	55	24	73	42	71	61	87	70	86	69	85	65	64	46	60	39	59	47											
3	65	27	74	30	66	30	61	39	81	52	72	59	91	74	91	69	89	69	74	46	52	36	64	48											
4	65	48	76	44	66	25	61	47	83	60	85	59	92	74	91	74	89	63	83	57	70	29	60	42											
5	55	23	76	30	55	25	55	47	87	63	87	67	93	71	97	75	64	57	80	69	66	37	48	32											
6	34	10	42	15	51	22	55	47	90	58	87	63	94	70	97	77	70	61	85	68	75	38	60	25											
7	47	29	56	25	61	36	63	37	90	60	83	65	94	70	100	73	70	61	85	65	71	48	56	36											
8	42	26	64	27	61	47	62	48	90	63	82	62	95	71	98	70	83	64	82	52	55	34	54	28											
9	34	12	64	32	59	28	62	40	87	61	82	61	95	75	98	70	83	54	82	59	67	33	49	28											
10	13	5	65	28	70	45	62	47	87	66	83	68	95	75	99	71	77	51	82	66	71	32	61	23											
11	24	2	81	43	70	43	58	47	87	65	83	65	95	72	101	72	86	55	88	70	66	36	52	19											
12	39	11	81	54	53	28	59	34	87	65	84	65	95	73	101	68	91	77	88	72	65	38	25	14											
13	48	26	81	53	52	27	77	35	87	67	84	63	96	73	95	65	91	73	83	70	71	29	52	20											
14	48	25	74	44	46	20	77	48	85	65	83	61	95	73	92	60	92	71	83	67	72	41	62	24											
15	41	16	68	45	55	23	76	44	83	68	83	67	92	79	93	62	92	66	83	68	69	57	63	32											
16	37	24	63	30	67	21	68	35	83	70	87	69	95	66	93	59	84	64	87	60	65	41	68	28											
17	42	19	63	45	67	34	70	54	82	69	89	71	90	68	93	59	86	66	67	56	44	36	68	33											
18	42	19	59	29	67	56	80	47	82	70	89	68	90	69	103	66	86	65	68	56	39	35	65	38											
19	19	7	55	23	72	58	83	45	86	69	88	71	91	67	95	69	86	65	71	62	49	36	71	49											
20	20	4	55	37	72	56	85	61	85	66	92	65	95	71	95	69	86	55	71	56	57	29	63	41											
21	40	18	58	48	66	39	85	62	87	66	92	68	95	67	95	69	80	55	76	42	72	31	49	37											
22	20	10	58	25	65	42	80	57	90	69	91	65	97	68	95	70	83	55	87	45	63	32	61	28											
23	38	11	67	40	72	42	60	50	92	52	92	66	92	75	104	73	83	61	64	50	63	45	54	21											
24	61	28	61	26	72	52	65	55	92	69	92	71	86	70	94	69	82	62	70	46	60	48	34	27											
25	51	37	41	30	56	45	76	51	88	69	89	66	82	70	85	59	77	65	58	34	62	42	36	28											
26	47	39	41	22	69	33	76	52	88	65	84	67	84	67	87	48	78	50	76	35	57	43	33	16											
27	51	30	26	13	61	37	75	57	85	69	84	69	84	70	89	45	82	54	80	52	55	50	47	20											
28	56	23	26	9	81	58	76	53	84	65	85	67	82	74	92	60	81	52	62	58	55	49	46	32											
29	68	24	---	---	81	45	86	62	83	61	83	65	90	70	92	69	74	59	62	45	65	45	46	33											
30	68	30	---	---	52	38	86	56	87	62	85	67	90	74	93	66	74	61	71	35	62	46	45	21											
31	68	26	---	---	63	28	---	---	87	69	---	---	88	70	93	67	---	---	66	34	---	---	58	21											
AV.	45	21	61	32	63	36	70	47	86	63	85	65	91	71	94	67	82	62	76	54	62	39	54	30											
MEAN	32.8		46.7		49.4		58.6		74.4		75.3		81.2		80.6		71.9		65.0		50.7		42.2												
STA AV	49	26	56	31	63	36	74	48	81	59	90	67	94	70	94	69	87	61	76	50	62	36	53	29											

NOTES: TEMPERATURE DATA ARE BASED ON CHICKASHA EXPERIMENT STATION RECORDS PUBLISHED IN U. S. WEATHER BUREAU CLIMATOLOGICAL DATA FOR OKLAHOMA, VOL. 71. STATION AVERAGE BASED ON RECORDS FROM JUNE 1953 THROUGH DEC. 1962.

1962 MONTHLY EVAPORATION AND WIND

MONTH	EVAPORATION (INCHES)	TOTAL WIND (MILES)
APRIL	5.99	3017
MAY	13.40	4631
JUNE	8.31	2248
JULY	9.49	1776
AUGUST	10.12	1600
SEPTEMBER	6.17	1730
OCTOBER	5.13	2363
NOVEMBER	3.47	2188

EVAPORATION DATA ARE BASED ON CHICKASHA EXPERIMENT STATION RECORDS PUBLISHED IN U. S. WEATHER BUREAU CLIMATOLOGICAL DATA FOR OKLAHOMA, VOL. 71.

1961 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										.00	.98	.00
2										.12	1.07	.00
3										.00	.00	.00
4										.00	.00	.08
5										.00	.00	.00
6										.00	.00	.00
7										.00	.00	.00
8										.00	.00	.54
9										1.13	.00	.00
10										.42	.01	.00
11										.00	.00	.00
12										.00	.00	.00
13										.06	.07	.00
14										.00	.05	.00
15										.00	.84	.00
16										.00	.06	.51
17										.00	.00	.04
18										.00	.00	.00
19										.00	.00	.00
20										.00	.00	.00
21										.00	.51	.00
22										.00	.22	.00
23										.00	.00	.00
24										.00	.00	.00
25										.00	.00	.00
26										.00	.00	.00
27										.00	.00	.00
28										.00	.00	.00
29										.06	.00	.00
30										.11	.00	.00
31										.07		.00
TOTAL										1.97	3.81	1.17
STAV												
NOTES: RECORDS BEGAN OCT 1, 1961. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 81 GAGES ON THE REACH BETWEEN STATION 400 AND 700.												
1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										514	<u>381</u>	405
2										* 502	*2170	449
3										375	*2340	474
4										355	*2450	396
5										325	*3390	*412
6										* 305	*4160	401
7										280	*2880	395
8										<u>260</u>	1530	398
9										282	*1000	407
10										713	793	408
11										612	709	392
12										*1010	669	387
13									*4390	*2570	621	389
14									*3470	*1780	563	395
15									*4540	* 935	650	423
16									*4310	*1730	*1020	618
17									*2110	1250	715	<u>584</u>
18									*1130	725	722	552
19									865	* 607	900	497
20									* 709	514	736	463
21									748	455	706	448
22									627	423	834	*435
23									495	386	711	418
24									401	349	638	403
25									* 462	* 319	577	390
26									*2000	296	538	379
27									*2250	284	508	370
28									*1280	261	* 474	364
29									748	280	438	357
30									620	279	407	<u>352</u>
31										273		354
MEAN										622	1141	426
INCHES										.150	.266	.103
NOTES: RECORDS BEGAN SEPT 13, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000007768. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 255,300. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	2.34	.00	.24	.00	.00	.00	.03
2	.00	.00	.00	.00	.00	.19	.00	.00	.01	.00	.00	.91
3	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
4	.14	.00	.00	.08	.08	.08	.00	.03	.78	.00	.00	.00
5	.00	.00	.00	.13	.00	.93	.00	.00	.00	.68	.00	.00
6	.00	.00	.00	.03	.00	.06	.00	.00	.23	.02	.28	.00
7	.00	.00	.00	.00	.00	.59	.00	.00	.44	.00	.08	.00
8	.00	.00	.00	.00	.00	.16	.00	.00	.15	.00	.00	.00
9	.00	.00	.00	.00	.00	1.05	.02	.00	.00	.00	.00	.00
10	.00	.00	.01	.20	.00	.01	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
14	.11	.14	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
15	.00	.23	.00	.00	.00	.01	.00	.00	1.38	.00	.01	.00
16	.00	.00	.00	.00	.00	.00	.01	.00	.02	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.01	.00	.00	.09	.28	.00
18	.00	.00	.00	.00	.00	.33	.06	.00	.00	.03	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.01
20	.00	.21	1.97	.00	.13	.00	.24	.00	2.54	.20	.00	.06
21	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.02	.00	.24	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.06	.00	.00	.04	.00	.00	.00	.00	.00
24	.00	.00	.10	.33	.12	.01	.14	.06	.01	.00	.00	.13
25	.07	.02	.01	.00	.21	.51	1.48	.00	.24	.00	.00	.04
26	.03	.00	.00	.10	1.44	.05	.00	.00	.00	.00	.80	.00
27	.00	.42	.00	1.15	.01	.02	.01	.00	.00	.50	.00	.00
28	.00	.00	.00	.02	.68	.01	.24	.00	.00	1.17	.00	.02
29	.00	-----	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.70	-----	.00	-----	.00
TOTAL	.40	1.02	1.09	2.12	2.67	7.37	2.29	1.06	5.81	2.74	1.45	1.20
STA AV												
NOTES: YEARLY PRECIPITATION 29.22 INCHES. 1/INSTALLATION OF ADDITIONAL GAGES ON REACH COMPLETED. PRECIPITATION VALUES FOR PERIOD JAN 1, 1962 TO MAR 19, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 81 GAGES ON THE REACH BETWEEN STATIONS 400 AND 700. PRECIPITATION VALUES FOR PERIOD MAR 20, 1962 TO DEC 31, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 84 GAGES ON THE REACH BETWEEN STATIONS 600 AND 700.												
1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 700 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	352	401	312	239	* 963	1990	643	497	334	395	* 829	540
2	344	392	329	235	768	*5940	593	453	225	389	472	445
3	* 340	377	325	236	* 550	*3040	558	411	133	362	412	830
4	341	362	313	* 236	442	*1710	516	624	160	345	355	730
5	338	354	296	252	374	1760	491	818	378	335	310	765
6	334	352	285	267	338	*3230	468	* 676	* 345	370	290	480
7	337	354	290	277	314	2140 E	428	578	238	340	348	470
8	357	354	* 294	274	274	*3050	381	489	340	335	322	380
9	351	347	295	276	275	*4500	* 347	406	305	* 330	280	330
10	336	336	288	305	217	3720	311	331	* 249	332	255	*300
11	314	326	276	* 594	326	*3680	291	284	290	338	252	290
12	311	* 322	271	468	220	*4220	254	240	* 585	315	245	280
13	311	316	269	* 441	199	*4850	217	212	497	295	243	275
14	311	310	267	367	186	4090	204	194	387	275	* 241	275
15	311	320	268	354	175	*2760	229	167	581	267	239	273
16	311	379	265	327	166	2250	170	146	* 630	256	239	272
17	311	374	262	295	164	1820	164	137	509	248	239	270
18	311	349	259	279	* 159	*1960	153	126	410	249	241	260
19	286	316	* 260	267	155	1670	159	119	*1160	255	245	260
20	249	309	368	259	151	1260	165	118	*5450	265	248	270
21	249	321	* 425	251	* 151	969	208	112	*4670	265	243	268
22	314	304	328	245	149	846	206	* 106	*3210	* 752	240	265
23	374	* 298	306	246	139	766	150	104	*1270	*1870	240	258
24	389	293	286	269	134	619	* 139	98	807	1060	242	258
25	404	294	281	283	138	627	* 688	91	643	582	238	265
26	* 420	298	277	265	150	626	466	87	566	* 500	286	*261
27	452	292	267	* 408	* 743	714	536	85	525	444	* 339	268
28	460	288	259	* 749	*1240	* 756	*1520	81	490	895	298	268
29	425	-----	252	605	*2680	1170	1320	80	444	509	260	270
30	403	-----	246	* 749	*2750	803	* 659	81	430	445	262	270
31	401	-----	244	-----	*2130	-----	533	193	-----	810	-----	268
MEAN	347	334	289	344	543	2251	425	263	875	465	298	352
INCHES	.083	.073	.070	.080	.131	.525	.102	.063	.204	.112	.070	.085
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000007768. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 255,300. YEARLY MEAN DISCHARGE, 563 CFS. YEARLY DISCHARGE, 1.598 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

HYDROGEOLOGY OF THE WASHITA EXPERIMENTAL WATERSHED

Ground water and the related geology have an important influence on both the quantity and quality of stream water in the study area. The character, the magnitude, and the areal and depth distribution of the hydrogeologic influences that affect stream conditions are described in the following text, tables, geologic map and section.

Stratigraphy of experimental watershed:

System	Group	Formation (map symbol)	Approximate thickness (feet)	Description
Quaternary		Alluvium and terrace deposits (Qat)	0-100	Silt, clay, fine sand, and some gravel. Unconsolidated deposits in Washita and tributary valleys. Maximum well yield about 200 gpm. Water generally very hard; relatively soft water (less than 400 ppm. total hardness) occurs in upper terrace along Washita; in extreme upper end of tributary valleys near Rush Springs formation; and in East Bitter and Winter Creek valleys.
		Gloud Chief (Pcc)	0-25	Gypsum and interbedded shale. Contains very little water; well drained by underlying permeable Rush Springs sandstone. Solution of the gypsum contributes to hardness of local surface and ground water.
Permian	White Horse	Rush Springs sandstone (Prs)	0-200	Fine-grained sandstone; cross-bedded and even-bedded. Most important aquifer in area; supplies as much as 500 gpm to irrigation wells. In most areas provides relatively soft, potable water.
		Marlow (upper part of Pmdb)	0-100	Shale, siltstone, fine-grained sandstone; gypsiferous. Verden sandstone member, near the middle, forms cap rock of buttes and small hills. Contains very little, highly mineralized water.
		Dog Creek shale and Blaine (lower part of Pmdb)	0-200	Shale, interbedded with some gypsum and fine-grained gypsiferous sandstone. Contains small amount of water. Water from gypsiferous zones is highly mineralized.
	El Reno	Chickasha (Pc)	100-250	Mixture of cross-bedded shales, siltstones, sandstones, and conglomerates. Contains moderate amount of water (wells yield as much as 50 gpm). Water locally may be highly mineralized but generally is of better quality than water in other formations, except Rush Springs and certain alluvial deposits.

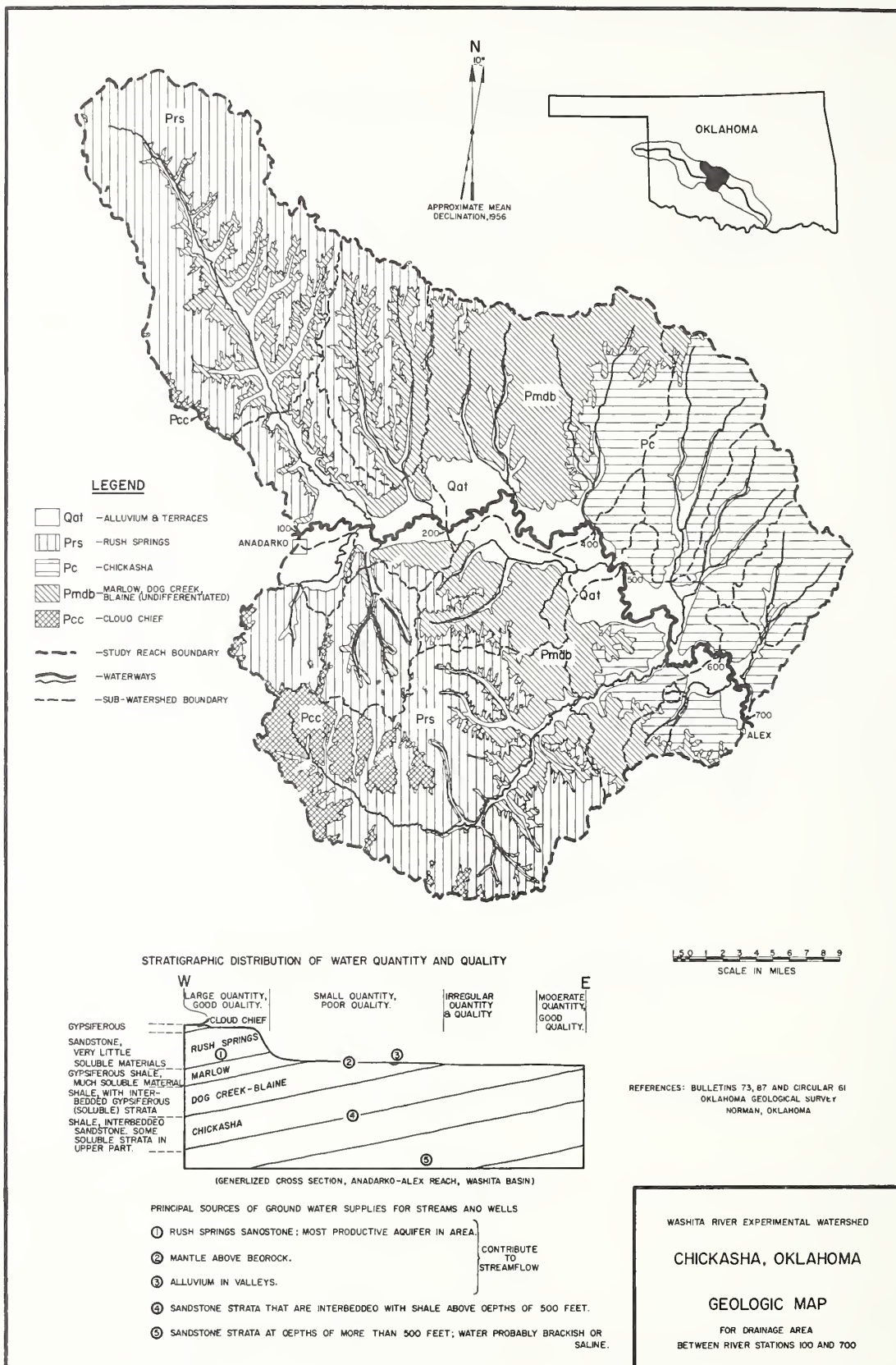
Structure of experimental watershed:

The axis of the northwest-plunging Anadarko syncline bisects the area. Generally, in the northern part, the rocks dip to the southwest and in the southern part, they dip to the north. Some jointing but no faulting has been observed. Available information indicates that surface-water and ground-water divides around reach nearly coincide; apparently there are no appreciable ground-water flows into or out of reach except as underflow through Washita valley alluvium.

Geology within experimental watershed between main-stem gaging stations:

Station location and number (intervening drainage area)	Percent of drainage area underlain by formation				
	Alluvium and terrace deposits	Gloud Chief	Rush Springs	Marlow, Dog Creek, and Blaine	Chickasha
Anadarko 100 (426.3 sq mi)	14.4	1.4	61.7	22.5	0.0
Verden 200 (176.4 sq mi)	21.1	0.0	2.0	57.3	19.6
Chickasha 400 (4th St.) (68.5 sq mi)	28.7	0.0	13.0	47.1	11.2
Chickasha 500 (Tpk.) (379.8 sq mi)	13.4	11.5	29.7	16.7	28.7
Tabler 600 (79.4 sq mi)	17.9	0.0	0.0	3.2	78.9
Alex 700					

References: Oklahoma Geological Survey, Norman, Oklahoma, Bulletins 73, 87, and Circular 61.



CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX

LOCATION: WATERSHED — Big Dry Creek Watershed above State Road 19 bridge in Grady County, Okla.; tributary to Washita River; Red River Basin.

GAGING STATION — SW $\frac{1}{4}$ sec. 33, T. 6 N., R. 6 W., lat. 35°57', long. 97°51', 4- $\frac{1}{2}$ miles northwest of Alex, Okla.; at State Road 19 bridge over Big Dry Creek.

AREA: 4,845 acres (7.57 sq. miles).

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	1/
	Percent of area	10	12	28	50	

SOILS: Residual, derived from shale and sandstone materials. These are moderately deep and shallow, gently rolling to steep rolling, and alluvium soils. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Nash-Quinlan loams	50	8	Weak fine granular	Moderate	Weak very fine subangular blocky	Moderate	28	Slow	Medium
Chickasha Zaneis silt loams	28	14	Moderate fine granular	Moderate	Moderate fine subangular blocky	Moderate	36	Moderate	Medium
Norwood-Yahola silt loams	22	18	Moderate fine granular	Moderate	Moderate medium granular	Moderate	40	Rapid	Medium

EROSION:	Erosion class	1	2	3	4	1/
	Percent of area	7	10	45	38	

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	1/
	Percent of area	10	2	30	10		48		

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area, in percent are: Alluvium, 4; Chickasha formation, 38; and Dog Creek-Blaine, 58. For a distance of 1- $\frac{1}{2}$ miles above the gaging station, Dry Creek shares its alluvial valley with a parallel flowing tributary stream. Within this reach these two streams also share a common water table; as a result there may be some interchange of water between these two streams, through intervening aquifers. See description of hydrogeology and the general geology map, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87, and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 5.9 miles. The channel is one of two constructed channels with a common levee, which carry flows through the same valley, each draining the slopes on its side.

CHARACTER OF FLOW: Intermittent, continuous.

INSTRUMENTATION: **Precipitation:** Seven recording weighing type gages, 3 of which are installed on a 3-mile square grid and 4 of which are located specifically for Dry Creek. Grid pattern oriented in north-northeast direction. All gages are in operation, with various time scales (primarily 24-hr.). See footnotes under monthly and daily tables for more specific information. **Runoff:** Staff gage, datum 1,050.98 ft.; all datum m.s.l. elev.; by 1929 adjustment. Stevens A-35 recorder in 30-inch well on right bank, with 9.6 in. per day time scale, datum 1,050.98 ft. Control, prior to June 20, 1963, sandy channel; after June 20, 1963, 5 to 1 V-notch weir installed between wing walls on upstream side of culvert. Low flow current meter measurements made by wading channel; high flow measurements made by crane from upstream side of culvert. Ratings defined by current meter measurements and model study.

WATERSHED CONDITIONS: A rotation of small grains, alfalfa, and cotton are grown on the bottomland areas comprising approximately 16% of the drainage area. The rest of the cultivated area is farmed to broomcorn, cotton, and sorghums. Most of the row crops are followed by winter cover crops. Farmers in the area use moldboard plows which bury crop residue. Weeds are controlled by surface tillage with spring-tooth or spike-tooth harrows prior to the planting of the following crops. Fertilization is based on recommendations made from soil tests. There are very few structural conservation measures such as farm ponds or grassed waterways applied. Farm ponds will average about 2 per sq. mile. The following table shows the land use:

Percent of watershed in									
Cultivation - 22						Pasture or range - 72		Wooded pasture - 5	
Percent of cultivated land in						Classification of range site condition based on production		Classification of range site condition based on production	
Alfalfa - 15	Sowed crops - 65	Row crops - 20							
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac				
4.7	28	35	35	30	250	Good - 10%	Fair - 75%	Good - 5%	Fair - 75%
						Poor - 15%		Poor - 20%	
						The general practice for good range utilization is 1 animal unit per 15 acres.			

GENERALLY REPRESENTS: Pastures of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1961 P 1/ Q										2.21	3.58	1.28 .343				
1962 P 1/ Q	.39 .246	.92 .247	1.31 .217	1.61 .271	2.30 .085	6.05 .525	2.49 .131	.76 .071	4.45 .114	3.58 .236	1.43 .063	1.36 .126	26.65 2.332			
STA AV 2/P Q										2.90	2.50	1.32 .234				
MEAN P 3/ 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	10-28	.0959	10-28	.0772	10-28	.1110	6-9	.159	10-28	.180	10-28	.194	6-7	.237	6-1	.411
MAXIMUMS FOR PERIOD OF RECORD 4/																
1961 TO 1962	10-28 1962	.0959	10-28 1962	.0772	10-28 1962	.1110	6-9 1962	.159	10-28 1962	.180	10-28 1962	.194	6-7 1962	.237	6-1 1962	.411
Notes: Quality of records: P, excellent; Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.8-5 and 69.7-7 and 9. 1/ Precipitation data obtained from a Thiessen weighted average of 5 gages on the watershed prior to Mar. 20, 1962, and 7 gages on the watershed after Mar. 20, 1962. 2/ Precipitation records began Oct. 1961; runoff records began Dec. 1961. 3/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Dec. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Maximum — Oct. 29, 469 cfs (2.22 ft). Minimum — no flow at times. PERIOD OF RECORD: Maximum — Oct. 29, 1962, 469 cfs (2.22 ft). Minimum — no flow at times. PEAK DISCHARGES: (Above base of 250 cfs) 1962 — June 6, 297 cfs (1.85 ft); July 16, 267 cfs (1.77 ft); Oct. 29, 469 cfs (2.22 ft).																
ABBREVIATED RATING TABLE: 1961 and 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																
GAGE HEIGHT								DISCHARGE								
0.12								0								
0.50								21.5								
1.00								83.6								
1.50								187								
2.00								356								
2.50								638								
3.00								996								

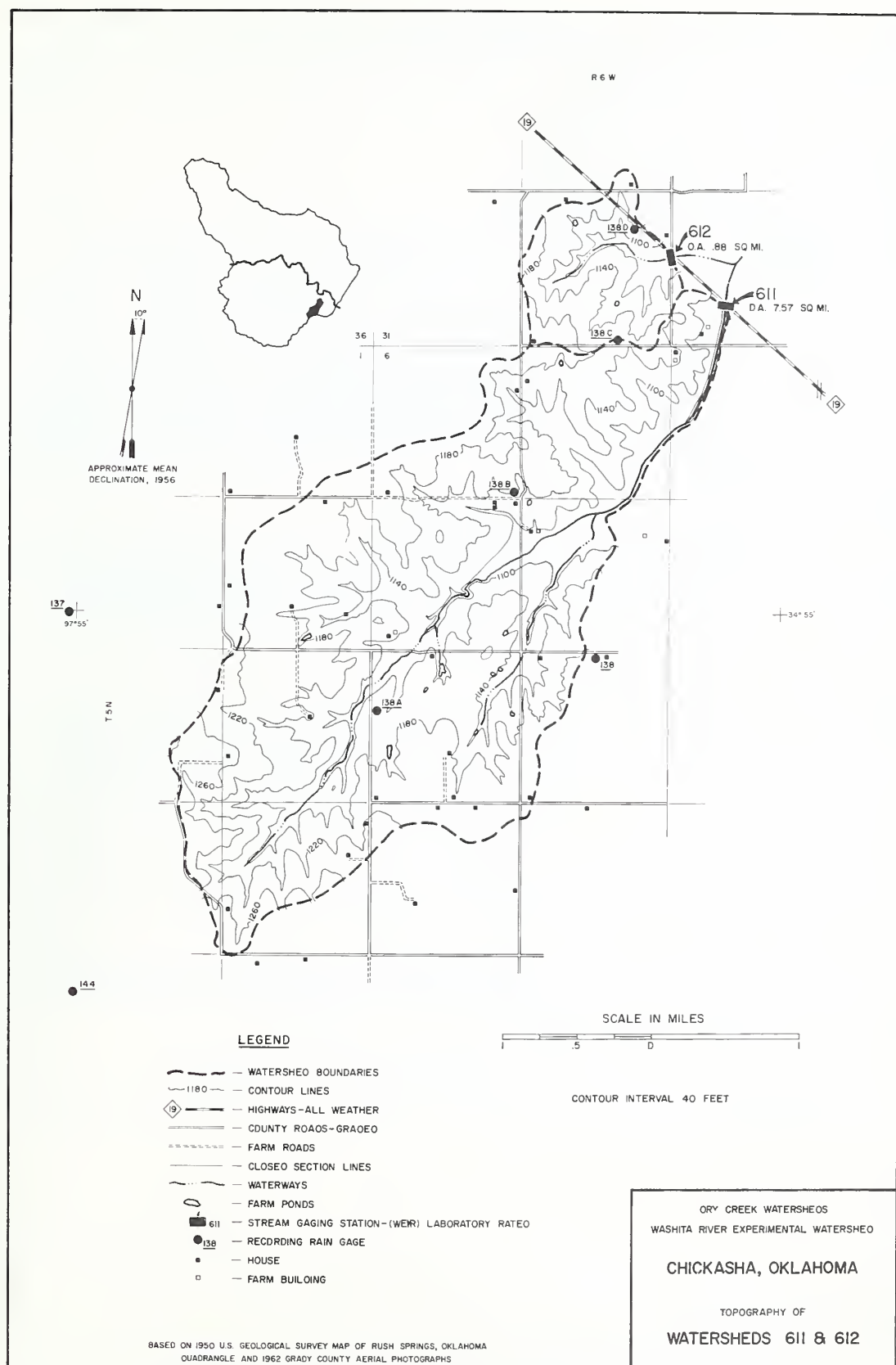
1961 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1										.00	.77	.00
2										.18	1.16	.00
3										.00	.00	.00
4										.00	.00	.06
5										.00	.00	.00
6										.00	.00	.00
7										.00	.00	.00
8										.00	.00	.48
9										1.15	.00	.00
10										.62	.00	.00
11										.00	.00	.00
12										.00	.00	.00
13										.04	.00	.00
14										.00	.00	.00
15										.00	.87	.00
16										.00	.00	.69
17										.00	.00	.05
18										.00	.00	.00
19										.00	.00	.00
20										.00	.00	.00
21										.00	.52	.00
22										.00	.26	.00
23										.00	.00	.00
24										.00	.00	.00
25										.00	.00	.00
26										.00	.00	.00
27										.00	.00	.00
28										.00	.00	.00
29		-----								.08	.00	.00
30		-----								.01	.00	.00
31		-----		-----		-----			-----	.13	-----	.00
TOTAL										2.21	3.58	1.28
STA AV												
NOTES: RECORDS BEGAN OCT 1, 1961. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 7 GAGES ON THE WATERSHED.												
1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												1.8
2												1.8
3												1.8
4												1.8
5												1.7
6												1.5
7												1.7
8												1.8
9												1.8
10												1.8
11												2.0
12												2.0
13												1.8
14											2.2	1.7
15											* 10	1.7
16											2.2	1.6
17											2.2	3.1
18											2.2	1.8
19											2.2	1.7
20											2.2	1.5
21											* 4.5	1.5
22											* 6.4	1.5
23											2.7	1.7
24											1.8	1.8
25											1.8	1.8
26											1.8	1.8
27											1.8	1.8
28											1.8	1.8
29		-----									1.8	1.8
30		-----									1.8	1.8
31		-----		-----		-----			-----		-----	1.8
MEAN												2.3
INCHES												.343
NOTES: RECORDS BEGAN NOV 14, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .004913. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 403.7. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	2.31	.00	.19	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00	.00	.95
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.14	.00	.00	.04	.08	.03	.00	.00	.06	.00	.00	.00
5	.00	.00	.00	.18	.00	.28	.00	.00	.00	.69	.00	.00
6	.00	.00	.00	.00	.00	.04	.00	.00	.38	.00	.19	.00
7	.00	.00	.00	.00	.00	.39	.00	.00	.31	.00	.22	.00
8	.00	.00	.00	.00	.00	.13	.00	.00	.02	.00	.00	.00
9	.00	.00	.00	.00	.00	1.38	.00	.00	.00	.00	.00	.00
10	.00	.00	.05	.11	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
14	.04	.06	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
15	.00	.21	.00	.00	.00	.00	.00	.00	1.15	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.27	.00
18	.00	.00	.00	.00	.00	.27	.30	.00	.00	.01	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
20	.00	.17	1.08	.00	.19	.00	.02	.00	2.20	.04	.00	.23
21	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.07	.00	.13	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.18	.33	.00	.06	.08	.12	.02	.00	.00	.13
25	.06	.03	.00	.00	.12	.13	1.83	.00	.28	.00	.00	.03
26	.09	.00	.00	.02	1.26	.16	.00	.00	.00	.00	.75	.00
27	.00	.45	.00	.81	.00	.01	.01	.00	.00	1.28	.00	.00
28	.00	.00	.00	.02	.65	.00	.23	.00	.00	1.43	.00	.01
29	.00	-----	.00	.00	.00	.47	.00	.00	.00	.00	.00	.01
30	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.42	-----	.00	-----	.00
TOTAL	.39	.92	1.31	1.61	2.30	6.05	2.49	.76	4.45	3.58	1.43	1.36
STAAV										2.90	2.50	1.32

NOTES: YEARLY PRECIPITATION 26.65 INCHES. ¹/₁ INSTALLATION OF ADDITIONAL GAGES ON WATERSHED COMPLETED. PRECIPITATION VALUES FOR PERIOD JAN 1, 1962 TO MAR 19, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 5 GAGES ON THE WATERSHED. PRECIPITATION VALUES FOR PERIOD MAR 20, 1962 TO DEC 31, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 7 GAGES ON THE WATERSHED.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 611 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.8	1.7	1.8	1.2	.9	30	.9	.3	.5	.1	.4	.4
2	1.8	1.8	* 1.8	1.2	.9	7.2	.6	.2	.3	.1	.4	6.9
3	1.8	1.8	1.7	1.3	.9	.9	.5	.2	.2	.2	.4	3.1
4	* 1.8	1.8	1.2	1.7	.7	.6	.4	.3	.2	.2	.4	.5
5	1.8	1.8	.9	1.8	.6	.6	.4	.4	.2	.3	.4	.4
6	1.8	1.8	.9	1.8	.6	.8	.4	.4	.2	.4	.4	.4
7	1.8	1.8	1.0	1.8	.6	.8	.4	.4	.1	.1	1.0	.4
8	1.8	1.8	1.2	1.8	.6	9.9	.4	.4	.1	.1	.2	.4
9	1.7	1.8	1.2	1.8	.5	28	.5	.5	.1	.2	.2	.4
10	1.5	1.8	1.2	* 1.8	.4	2.3	.6	.6	.1	.3	.2	.4
11	1.5	1.8	1.2	1.8	.4	1.2	.6	.5	.1	.4	.2	.4
12	1.5	1.8	1.3	1.8	.4	.9	.6	.4	.0	.3	.2	.4
13	1.5	1.8	1.5	1.8	.3	.7	.5	.4	.0	.2	.2	.4
14	1.7	1.8	1.5	1.8	.2	.6	.3	.4	.0	.1	.2	.4
15	1.7	2.0	1.5	1.8	.2	.6	.2	.4	2.6	.1	.2	.4
16	1.5	2.0	1.3	1.8	.2	.5	.2	.4	.0	.1	.2	.5
17	1.5	1.8	1.2	1.8	.2	.4	.2	.4	.0	.1	.2	.6
18	1.5	1.8	1.2	1.8	.2	.5	.2	.4	.0	.2	.3	.6
19	1.2	1.7	1.2	1.8	.2	.7	.2	.6	.0	.2	.4	.6
20	1.0	1.5	* 4.5	1.8	.2	.9	.2	.6	17	.2	.4	.7
21	1.3	1.7	1.5	1.8	.2	.7	.2	.4	.7	.2	.4	.9
22	2.1	1.8	1.2	1.8	.2	.6	.2	.6	.1	.2	.4	.9
23	1.5	1.8	1.2	1.8	.1	.6	.2	.7	.1	.2	.4	.7
24	1.5	1.8	1.5	2.5	.1	.7	.2	.6	.1	.2	.4	.6
25	1.7	1.8	1.7	2.0	.1	1.0	16	.5	.1	.3	.4	.6
26	1.8	1.8	1.3	1.8	1.6	1.2	.4	.5	.1	.4	2.4	.6
27	1.8	1.8	1.2	6.0	3.4	1.5	.2	.6	.1	4.1	.8	.6
28	1.7	1.8	1.2	1.5	.8	1.2	.2	.6	.1	37	.4	.6
29	1.5	-----	1.3	.9	1.2	2.1	.3	.6	.1	.7	.4	.6
30	1.5	-----	1.5	.9	.2	1.2	.2	.6	.1	.4	.4	.6
31	1.5	-----	1.3	-----	.2	-----	.3	.6	-----	.4	-----	.6
MEAN	1.6	1.8	1.4	1.8	.6	3.6	.9	.5	.8	1.5	.4	.8
INCHES	.246	.247	.217	.271	.085	.525	.131	.071	.114	.236	.063	.126

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .004913. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 403.7. YEARLY MEAN DISCHARGE, 1.3 CFS. YEARLY DISCHARGE, 2.332 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.



CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX

LOCATION: WATERSHED — Little Dry Creek Watershed above State Road 19 bridge in Grady County, Okla.; tributary to Big Dry Creek, Washita River; Red River Basin.

GAGING STATION — NW $\frac{1}{4}$ sec. 33, T. 6 N., R. 6 W., lat. 35°57', long. 97°51', 5 miles northwest of Alex, Okla.; on State Road 19 bridge over Little Dry Creek.

AREA: 563 acres (.88 sq. mile).

Slope — Percent	0-1	1-3	3-5	5-8
Percent of area	1	1	2	96

1/

SOILS: Residual, derived from shale and sandstone materials. These are moderately deep and shallow, on rolling to steeply rolling and sloping land. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Quinlan loam	74	8	Weak fine granular	Moderate	Moderate medium granular	Moderate	24	Moderate	Medium
Noble-Nash loams	15	14	Moderate medium granular	Moderate	Moderate medium granular	Moderate	34	Moderate	Medium
Kingfisher silt loam	10	12	Moderate medium granular	Moderate	Strong medium subangular blocky	Moderate	40	Moderately slow	Medium
Norwood silt loam	1	16	Moderate fine granular	Moderate	Moderate medium granular	Moderate	50	Moderate	Medium

Erosion class	1	2	3	4
Percent of area	2	10	78	10

1/

Class	I	II	III	IV	V	VI	VII
Percent of area		1	5	4		90	

1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, trace; Cloud Chief, 0.0; Rush Springs, 0.0; Dog Creek-Blaine and Marlow, 0.0; Chickasha, 100.0. Little Dry, the smallest gaged watershed in the study reach, contains only the Chickasha geologic formation. See description of hydrogeology and the general geology map, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 1.25 miles.

CHARACTER OF FLOW: Intermittent, continuous.

INSTRUMENTATION: **Precipitation:** Two recording weighing type gages in operation, with 24-hr. time scales. See footnotes under monthly and daily tables for more specific information. **Runoff:** Staff gage on left bank; Stevens A-35 recorder installed in 30-in. well on left bank upstream from State Road 19 bridge with 9.6 in. per day time scales, datum 1,067.10 ft. (all datum m.s.l. elev.; by 1929 adjustment) from Nov. 14, 1961 to Mar. 20, 1962. After Mar. 20, staff gage on left bank, two Belfort FW-1's installed in 30-in. well on left bank with 1.8 in. per day and 28.8 in. per day time scales, datum 1,067.10 ft. Artificial control consisting of a broad crested "V" notch weir installed June 24, 1963, with 5 to 1 side slopes made of reinforced concrete and placed between the upstream wing walls of the culvert. Weir rated by model studies and checked periodically by current meter measurements.

WATERSHED CONDITIONS: A small area in creek bottom is farmed to an alfalfa, small grain rotation. This area has a high water table and is quite high in production. The grass is big and little bluestem with some buffalo grass. Pastures have always been well managed with proper grazing for good production. Fertilization is based on soil test recommendations. There is no need for structural conservation measures such as terraces, farm ponds, or grassed waterways. The following table shows the land use:

Percent of watershed in									
Cultivation - 4						Pasture or range - 92		Wooded pasture - 4	
Percent of cultivated land in						Classification of range		Classification of range	
Alfalfa - 100		Sowed crops - 0			Row crops - 0			Farmsteads, roads, airports, etc.	
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	site condition based on production	site condition based on production		
						Good - 90% Fair - 10%	Fair - 100%		
5	35	45	40	30	300	The general practice for good range utilization is 1 animal unit per 5 acres.			

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1961	P 1/ Q										2.42	3.20	1.21 .744			
1962	P 1/ Q	.31 .655	.97 .537	1.62 .503	2.76 .790	1.90 .207	6.39 .900	2.92 .182	.80 .000	5.08 .528	2.68 .055	1.45 .004	1.51 .368	28.39 4.729		
STA AV	2/P Q										2.55	2.32	1.36 .556			
MEAN P	3/ 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1962	9-20	.1335	9-20	.1068	9-20	.1756	9-20	.399	9-20	.496	9-20	.504	9-20	.504	9-15	.528
MAXIMUMS FOR PERIOD OF RECORD 4/																
1961 TO 1962	9-20 1962	.1335	9-20 1962	.1068	9-20 1962	.1756	9-20 1962	.399	9-20 1962	.496	9-20 1962	.504	9-20 1962	.504	9-15 1962	.528
Notes: Quality of records: P, excellent, Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.8-5 and 69.7-7 and 9. 1/ Precipitation data obtained from one gage on the watershed prior to Mar. 20, 1962 and from a Thiessen weighted average of 2 gages on the watershed after Mar. 20, 1962. 2/ Precipitation records began Oct. 1961; runoff records began Dec. 1961. 3/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Dec. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Maximum — Sept. 20, 75.8 cfs (1.11 ft). Minimum — no flow (.14 ft). PERIOD OF RECORD: Maximum — Sept. 20, 1962, 75.8 cfs (1.11ft). Minimum — no flow (.14 ft). PEAK DISCHARGES: (Above base of 100 cfs) 1962 — none.																
ABBREVIATED RATING TABLE: 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																
GAGE HEIGHT								DISCHARGE								
							.19									.61
							.22									2.3
							.32									8.6
							.42									15.9
							.52									28.9
							.72									40.6
							1.02									61.9
							1.52									105
							1.92									186
							2.42									264

1961 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1										.00	.55	.00	
2										.19	1.15	.00	
3										.00	.00	.00	
4										.00	.00	.07	
5										.00	.00	.00	
6										.00	.00	.00	
7										.00	.00	.00	
8										.00	.00	.47	
9										1.13	.00	.00	
10										.81	.00	.00	
11										.00	.00	.00	
12										.00	.00	.00	
13										.00	.00	.00	
14										.00	.03	.00	
15										.00	.87	.00	
16										.00	.00	.62	
17										.00	.00	.05	
18										.00	.00	.00	
19										.00	.00	.00	
20										.00	.00	.00	
21										.00	.38	.00	
22										.00	.22	.00	
23										.00	.00	.00	
24										.00	.00	.00	
25										.00	.00	.00	
26										.00	.00	.00	
27										.00	.00	.00	
28										.00	.00	.00	
29		-----								.05	.00	.00	
30		-----								.08	.00	.00	
31		-----		-----		-----			-----	.16	-----	.00	
TOTAL										2.42	3.20	1.21	
STA AV													
NOTES: RECORDS BEGAN OCT 1, 1961. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 3 GAGES ON THE WATERSHED.													

1961 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1												.7	
2												.7	
3												.7	
4												.7	
5												.7	
6												.6	
7												.5	
8												.5	
9												.5	
10												.5	
11												.5	
12												.5	
13												.5	
14											.1	.5	
15											* .4	.5	
16											.0	1.5	
17											.0	.5	
18											.1	.5	
19											.4	.5	
20											.4	.5	
21											* .4	.5	
22											.5	.5	
23											.5	.5	
24											.5	.5	
25											.5	.5	
26											.5	.5	
27											.5	.5	
28											.5	.5	
29		-----									.5	.5	
30		-----									.7	.5	
31		-----		-----		-----			-----		-----	.5	
MEAN												.6	
INCHES												.744	
NOTES: RECORDS BEGAN NOV 14, 1961. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .04228. TO CONVERT DISCHARGE IN INCHES TO AC/FT, MULTIPLY BY 46.92. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.													

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	2.00	.00	.19	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.36	.00	.00	.02	.00	.00	1.17
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.10	.00	.00	.05	.10	.15	.00	.00	.11	.00	.00	.00
5	.00	.00	.00	.14	.00	.32	.00	.00	.00	.65	.00	.00
6	.00	.00	.00	.00	.00	.07	.00	.00	.24	.00	.18	.00
7	.00	.00	.00	.00	.00	.85	.00	.00	.24	.00	.22	.00
8	.00	.00	.00	.00	.00	.12	.00	.00	.04	.00	.00	.00
9	.00	.00	.00	.00	.00	.92	.00	.00	.00	.00	.00	.00
10	.00	.00	.03	.12	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00
13	.00	.00	.00	.00	.00	.16	.00	.02	.00	.00	.00	.00
14	.04	.03	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
15	.00	.27	.00	.00	.00	.00	.00	.00	1.30	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.27	.00
18	.00	.00	.00	.00	.00	.33	.13	.00	.00	.06	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
20	.00	.21	1.30	.00	.14	.00	.11	.00	2.82	.00	.00	.16
21	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.04	.00	.26	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.29	.34	.00	.00	.08	.09	.03	.00	.00	.13
25	.05	.03	.00	.00	.11	.37	2.43	.00	.27	.00	.00	.03
26	.07	.00	.00	.02	.94	.00	.00	.00	.00	.00	.78	.00
27	.00	.43	.00	2.02	.00	.03	.00	.00	.00	.63	.00	.00
28	.00	.00	.00	.01	.61	.00	.15	.00	.00	1.24	.00	.02
29	.00	-----	.00	.00	.00	.61	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.50	-----	.00	-----	.00
TOTAL	.31	.97	1.62	2.76	1.90	6.39	2.92	.80	5.08	2.68	1.45	1.51
ST. AVE.										2.55	2.32	1.36
NOTES: YEARLY PRECIPITATION 28.39 INCHES. 1/ INSTALLATION OF ADDITIONAL GAGES ON WATERSHED COMPLETED. PRECIPITATION VALUES FOR PERIOD JAN 1, 1962 TO MAR 19, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 1 GAGE ON THE WATERSHED. PRECIPITATION VALUES FOR PERIOD MAR 20, 1962 TO DEC 31, 1962 ARE A THIESSEN WEIGHTED AVERAGE OF 2 GAGES ON THE WATERSHED.												
1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.5	.4	.5	.5	.3	2.6	.2	.0	.0	.0	.0	.0
2	.5	.4	.4	.5	.3	2.0	.1	.0	.0	.0	.0	2.3
3	.5	.4	.2	.5	.2	.1	.2	.0	.0	.0	.0	.2
4	.5	.4	.2	.5	.2	.1	.2	.0	.0	.0	.0	.0
5	.5	.4	.2	.5	.1	.2	.1	.0	.0	.2	.0	.0
6	.5	.4	.2	.5	.1	.1	.0	.0	.0	.0	.0	.0
7	.5	.4	.3	.5	.1	2.6	.0	.0	.0	.0	.0	.1
8	.5	.4	.4	.5	.1	2.0	.0	.0	.0	.0	.0	.1
9	.5	.4	.4	.4	.1	5.4	.0	.0	.0	.0	.0	.1
10	.5	.4	.4	.4	.1	.2	.0	.0	.0	.0	.0	.1
11	.5	.4	.4	.4	.1	.2	.0	.0	.0	.0	.0	.1
12	.5	.4	.4	.3	.1	.3	.0	.0	.0	.0	.0	.1
13	.5	.4	.4	.3	.1	.3	.0	.0	.0	.0	.0	.1
14	.5	.4	.4	.3	.1	.4	.0	.0	.0	.0	.0	.2
15	.5	.4	.4	.2	.1	.4	.0	.0	.6	.0	.0	.2
16	.5	.4	.4	.2	.1	.4	.0	.0	.0	.0	.0	.2
17	.5	.5	.4	.2	.1	.4	.0	.0	.0	.0	.0	.2
18	.5	.5	.4	.2	.1	.4	.0	.0	.0	.0	.0	.2
19	.5	.5	.4	.2	.1	.3	.0	.0	.0	.0	.0	.2
20	.5	.5	.5	.2	.1	.2	.0	.0	12	.0	.0	.2
21	.5	.5	.3	.2	.1	.3	.0	.0	.0	.0	.0	.3
22	.5	.5	.2	.2	.1	.3	.0	.0	.0	.0	.0	.3
23	.5	.5	.1	.2	.0	.3	.0	.0	.0	.0	.0	.3
24	.5	.5	.5	.2	.0	.3	.0	.0	.0	.0	.0	.4
25	.5	.5	.5	.2	.0	.2	3.4	.0	.0	.0	.0	.4
26	.5	.5	.5	.2	1.2	.2	.1	.0	.0	.0	.1	.4
27	.5	.8	.5	.6	.2	.2	.0	.0	.0	.0	.0	.4
28	.5	.5	.5	.6	.4	.2	.0	.0	.0	1.1	.0	.4
29	.5	-----	.5	.5	.1	.5	.0	.0	.0	.0	.0	.4
30	.5	-----	.5	.5	.1	.2	.0	.0	.0	.0	.0	.4
31	.5	-----	.5	-----	.1	-----	.0	.0	-----	.0	-----	.4
MEAN	.5	.5	.4	.6	.2	.7	.1	.0	.4	.0	.0	.3
INCHES	.655	.537	.503	.790	.207	.900	.182	.000	.528	.055	.004	.368
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .04228. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 46.92. YEARLY MEAN DISCHARGE, .31 CFS. YEARLY DISCHARGE, 4.729 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO

LOCATION: WATERSHED — Tonkawa Creek Watershed above county road south of Anadarko in Caddo County, Okla.; tributary to Washita River; Red River Basin.

GAGING STATION — NW $\frac{1}{4}$ sec. 34, T. 7 N., R. 10 W., lat. 35°03', long. 98°15', 2 miles south of Anadarko, Okla., on upstream side of section line road bridge.

AREA: 16,640 acres (26.0 sq. miles).

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	1/
	Percent of area	15	15	22	15	30	3	

SOILS: The alluvial soils are derived from alkaline red bed sediments, and the residual soils are derived from Rush Springs sandstone. 1/

Soil	Percent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Darnell Noble sandy loams	35	8	Weak medium granular	Moderate	Weak fine crumb	Moderate	60	Moderate	Medium
Noble Cobb Vanoss sandy loams	30	12	Moderate medium granular	Moderate	Moderate medium prismatic	Moderate	48	Moderate	Medium
Cobb Daugherty Noble fine sandy loams	20	10	Structureless fine granular	Rapid	Moderate medium prismatic	Moderate	36	Moderate	Medium
Pulaski Cyril silty clay loams	15	14	Moderate fine granular	Moderate	Moderate fine crumb	Moderate	60	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	1/
	Percent of area	21	55	20	4	

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	1/
	Percent of area	15	15	28	15	2	23	2	

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 4.3; Cloud Chief, 10.3; Rush Springs, 85.4; Dog Creek, Blaine, and Marlow, 0.0; and Chickasha, 0.0. In comparison to most tributary watersheds this one has a small area of alluvium and large areas of Cloud Chief and Rush Springs. See description of hydrogeology and general geology map pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla., Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 4.8 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: Precipitation: Recording weighing type gages installed on a 3-mile square grid. Grid pattern oriented in north-northeast direction and consists of approximately 6 gages, all in operation, with various time scales (primarily 24-hour). Runoff: Stevens A-35 recorder on 24-inch well on upstream side of county road with 9.6 inches per day time scale; from June 27, 1962, to Aug. 10, 1963, datum 1,175.91 ft., all datum m.s.l. elev. by 1929 adjustment. After Aug. 10, 1963, tape down from reference point on upstream side of bridge; Stevens A-35 water-level recorder and bubble gage servo-manometer on left bank with 9.6 inches per day time scale for headwater gage, datum 1,181.92 ft.; Stevens A-35 water-level recorder installed in 24-inch well on left bank with 9.6 inches per day time scale for tailwater gage, datum 1,171.92 ft. Artificial control consisting of a reinforced concrete broad crested "V" notch weir with 5 to 1 side slopes. Low flow current meter measurements made by wading; high flow current meter measurements made by crane from upstream side of bridge. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: The better bottom land soils comprising about 10% of the drainage area have a rotation of alfalfa, cotton, and maize. The remaining bottom land and sloping land have been seeded to grass or lie idle. Farmers in the area use moldboard plows which bury crop residue. Weeds are controlled by surface tillage with spring-tooth or spike-tooth harrows prior to the planting of the following crops. Fertilization is based on recommendations made from soil tests. Much of the sloping land has been terraced. There are very few structural conservation measures such as farm ponds or grassed waterways other than terraces. Farm ponds will average about 4 per sq. mile. The following table shows the land use:

Percent of watershed in											
Cultivation - 10						Pasture or range - 83		Wooded pasture - 4		Miscellaneous - 3	
Percent of cultivated land in						Classification of range site condition based on production		Classification of range site condition based on production		Farmsteads, roads, airports, etc.	
Alfalfa - 14		Sowed crops - 32		Row crops - 54							
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield lb/ac	Good - 10%	Fair - 30%	Fair - 35%	Poor - 65%		
						Poor - 60%					
4	30	28	30	40	450	The general practice for good range utilization is 1 animal unit per 15 acres.					

GENERALLY REPRESENTS: Small mixed tributary watersheds of the Southwestern Prairies, Cotton and Forage Region, specifically the Cross Timbers and the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Plains land resource areas (J-24 and H-78) in Kansas, Oklahoma, and Texas.

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1962	P 1/ Q	.29	.88	.70	2.11	4.16	8.42	3.03 .150	1.87 .086	4.61 .214	2.12 .091	1.13 .110	1.27 .157	30.59
STA AV	2/P Q										2.02	2.22	1.02	
MEAN P 62 YR	3/ Q	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME

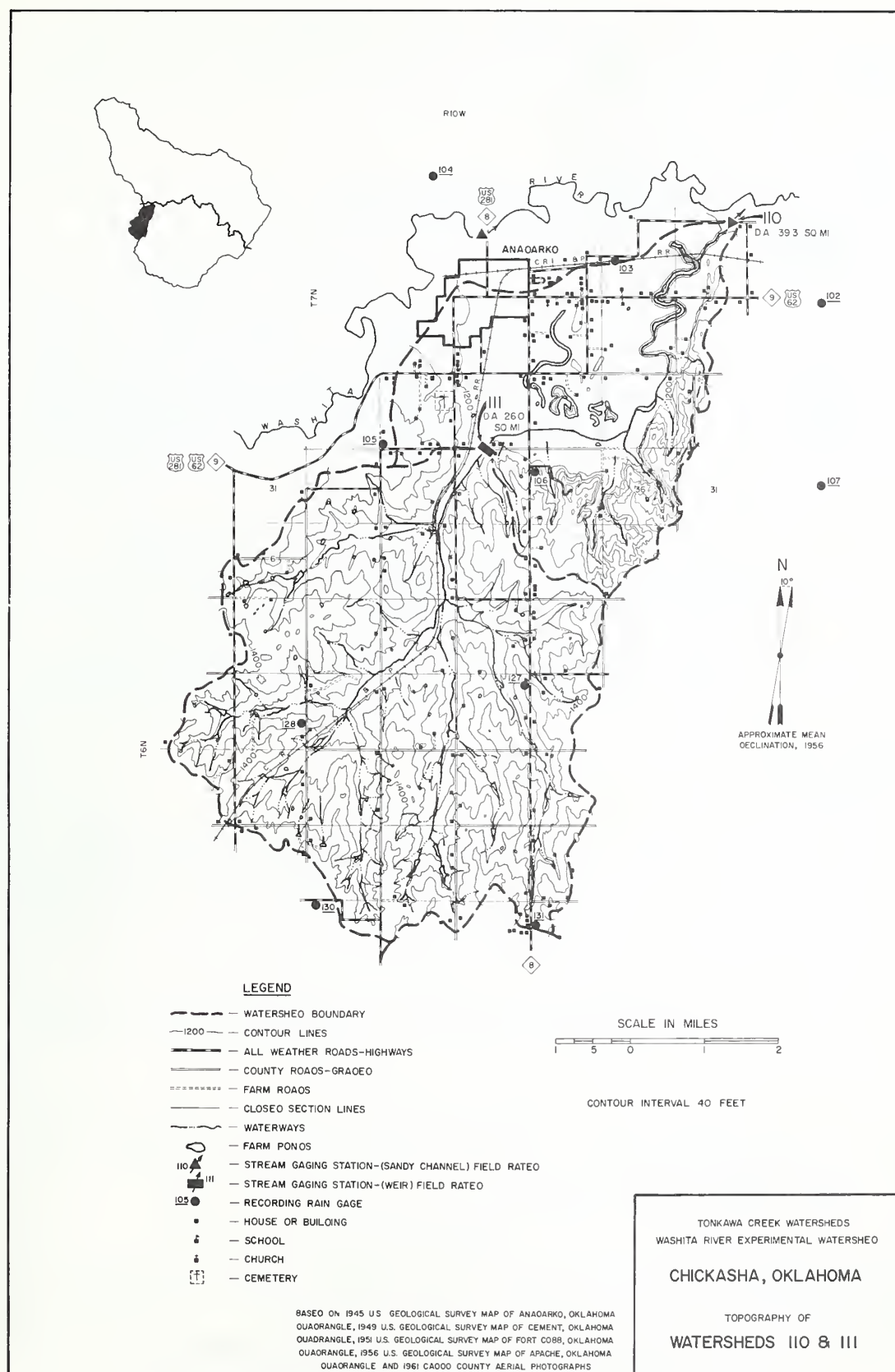
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 62 TO 1962	9-15 1962	.0471	9-15 1962	.0361	9-15 1962	.0670	9-15 1962	.118	9-15 1962	.126	9-15 1962	.128	9-15 1962	.132	9-15 1962	.170

Notes: Quality of records: P, excellent; Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.7-7 and 9 and 69.10-4. 1/ Precipitation data obtained from a Thiessen weighted average of 6 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began July 1962. 3/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began July 1962, therefore, the maximum discharge and depths shown are probably not the annual maximums for 1962.

MISCELLANEOUS DATA	
RUNOFF PEAK DATA: YEAR (1962): Incomplete.	
PERIOD OF REGORD: Maximum — Sept. 15, 1962, 790 cfs E (11.17 ft). Minimum — Aug. 23, 1962, 0.8 cfs (6.86 ft).	
PEAK DISCHARGES: (Above base of 400 cfs) 1962 — partial year - Sept. 15, 1962, 790 cfs E (11.17 ft).	
ABBREVIATED RATING TABLE: 1962 (Stage recorder datum; gage height in ft, discharge in cfs).	

GAGE HEIGHT	DISCHARGE
6.50	0
6.80	.4
7.00	1.8
7.50	5.0
8.00	35
9.00	100
10.00	315
11.00	700

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	3.80	.00	.42	.00	.00	.00	.10
2	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	1.02
3	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
4	.11	.00	.00	.06	.15	.00	.00	.00	.67	.00	.00	.00
5	.00	.00	.00	.19	.00	1.06	.00	.00	.00	.62	.00	.00
6	.00	.00	.00	.03	.00	.00	.00	.00	.13	.00	.14	.00
7	.00	.00	.00	.00	.00	.32	.00	.00	.66	.00	.00	.00
8	.00	.00	.00	.00	.00	.06	.01	.00	.17	.00	.00	.00
9	.00	.00	.00	.00	.00	1.12	.11	.00	.00	.00	.00	.00
10	.00	.00	.00	.38	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	1.16	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
14	.04	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.03	.00	.00	.00	.04	.00	.00	2.24	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.16	.38	.00
18	.00	.00	.00	.00	.00	.32	.19	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00
20	.00	.14	.65	.00	.05	.00	.02	.00	.42	.23	.00	.00
21	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.02	.00	.01	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.01	.00	.00	.51	.00	.00	.00	.00	.00
24	.00	.00	.03	.37	.08	.01	.12	.02	.01	.00	.00	.07
25	.08	.00	.02	.00	.34	.35	1.54	.00	.28	.00	.00	.06
26	.02	.00	.00	.49	2.51	.07	.00	.00	.00	.00	.61	.00
27	.00	.29	.00	.56	.00	.00	.00	.00	.00	.33	.00	.00
28	.00	.00	.00	.00	1.03	.00	.41	.00	.00	.73	.00	.02
29	.00	-----	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	1.42	-----	.00	-----	.00
TOTAL	.29	.88	.70	2.11	4.16	8.42	3.03	1.87	4.61	2.12	1.13	1.27
ST. AV.										2.02	2.22	1.02
NOTES: RECORDS BEGAN OCT 1, 1961. YEARLY PRECIPITATION 30.59 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 6 GAGES ON THE WATERSHED.												
1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1							3.1	2.4	1.3	2.0	2.4	3.0
2							2.9	1.9	1.0	*	2.4	6.6
3							* 2.9	1.9	<u>.9</u>	2.1	2.4	5.9
4							2.9	1.8	4.0	2.0	2.4	3.4
5							2.8	1.8	1.6	2.3	2.4	* 3.2
6							2.8	1.6	1.7	<u>2.5</u>	2.4	3.2
7							2.8	1.6	2.9	2.2	2.5	3.2
8							2.8	* 1.6	2.6	1.9	2.4	3.1
9							2.8	1.5	2.1	1.9	2.4	3.1
10							2.7	1.5	1.9	1.9	2.4	3.1
11							* 2.6	1.4	1.8	1.9	2.5	3.1
12							2.5	1.4	1.7	2.0	2.6	3.3
13							2.3	1.4	* 1.6	2.0	2.6	3.7
14							2.3	1.2	1.6	1.9	2.5	3.2
15							2.5	1.2	* <u>.89</u>	* 1.9	* 2.5	3.2
16							2.7	1.2	3.0	2.1	2.6	3.1
17							2.9	1.2	2.4	2.1	2.3	* 3.2
18							2.6	1.0	2.2	2.1	<u>2.1</u>	3.2
19							2.6	1.0	2.4	2.4	<u>2.3</u>	3.3
20							2.5	1.0	* 5.7	<u>1.8</u>	2.4	3.3
21							2.5	1.0	2.0	2.0	2.4	3.2
22							2.5	.9	1.7	2.0	2.4	3.2
23							* 6.5	<u>.8</u>	1.6	1.9	2.5	3.2
24							2.6	* .9	1.6	1.9	2.6	3.3
25							* <u>2.3</u>	.9	1.9	1.9	2.9	3.3
26							2.3	.9	1.9	1.9	<u>3.7</u>	3.9
27							3.1	2.3	1.0	1.9	3.2	3.9
28							3.0	2.6	.9	1.9	* 2.1	3.0
29		-----					3.3	2.4	.9	1.9	2.3	3.8
30		-----					3.2	2.0	.9	1.9	2.4	3.7
31		-----		-----			<u>1.9</u>	* <u>2.1</u>	-----	<u>2.3</u>	-----	<u>3.7</u>
MEAN							3.4	1.9	5.0	2.1	2.6	3.5
INCHES							.150	.086	.214	.091	.110	.157
NOTES: RECORDS BEGAN JUNE 27, 1962. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001430. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.387. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												



CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO

LOCATION: WATERSHED — Delaware Creek Watershed above county road bridge east of Anadarko in Caddo County, Okla.; tributary to Washita River; Red River Basin.

GAGING STATION — NW $\frac{1}{4}$ sec. 29, T. 7 N., R. 9 W., lat 35°03', long. 98°10', 3 miles east and 1 mile south of Anadarko, Okla., at section line road bridge.

AREA: 25,660 acres (40.1 sq. miles).

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	1/
	Percent of area	15	10	20	40	10	5	

SOILS: The alluvial soils are derived from alkaline red bed sediments, and the residual soils are derived from Rush Springs sandstone. 1/

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Darnell Quinlan sandy loams	50	6	Weak medium granular	Moderate	Weak fine crumb	Moderate	18	Slow	Slow
Noble fine sandy loam	20	14	Weak medium granular	Moderate	Weak fine crumb	Moderate	60	Moderate	Rapid
Daugherty sandy loam	15	12	Structureless fine granular	Rapid	Moderate coarse prismatic	Moderate	48	Moderate	Rapid
Pulaski Cyril silty clay loams	15	14	Moderate fine granular	Moderate	Moderate fine crumb	Moderate	60	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	1/
	Percent of area	15	50	33	2	

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	1/
	Percent of area	3	25	25	10	3	30	4	

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 9.7; Cloud Chief, 3.4; Rush Springs, 84.5; Dog Creek, Blaine, and Marlow, 2.4; and Chickasha, 0.0. The chloride content of the low-flow stream water of this tributary is 3 to 6 times the content found in adjoining tributaries. This may be due either to contaminating oil field brine or to the presence of evaporite deposits of unique chemical composition. See description of hydrogeology and general geology map, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla. Bulletins 73, 87, and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 9.2 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: **Precipitation:** Recording weighing type gages installed on a 3-mile square grid. Grid pattern oriented in north-northeast direction and consists of approximately 10 gages, all in operation, with various time scales (primarily 24-hour). **Runoff:** Tape down from reference point on upstream bridge rail; Stevens A-35 recorder installed in 30-inch well on upstream side of county road bridge with 9.6 inches per day time scale; datum 1,157.07 ft. (all datum m.s.l. elev. by 1929 adjustment), from Aug. 13, 1962, to July 22, 1963. After July 22, 1963, tape down from reference point on upstream bridge rail; Stevens A-35 water level recorder installed in 30-inch well on upstream side of county road bridge with 9.6 inches per day time scale, datum 1,158.12 ft. Artificial control consisting of a broad crested "V" notch weir with 4 to 1 side slopes made of steel sheet piling with a reinforced concrete cap. Low flow current meter measurements made by wading; high flow current meter measurements made by crane from upstream side of bridge. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: The better bottom land soils comprising about 20% of the drainage area have a rotation of alfalfa, cotton, and maize. The remaining bottom land and sloping land have been seeded to grass or lie idle. Farmers in the area use moldboard plows which bury crop residue. Weeds are controlled by surface tillage with spring-tooth or spike-tooth harrows prior to the planting of the following crops. Fertilization is based on recommendations made from soil tests. Much of the sloping land has been terraced. There are very few structural conservation measures such as farm ponds or grassed waterways other than terraces. Farm ponds will average about 4 per sq. mile. The following table shows the land use:

Percent of watershed in												
Cultivation - 21						Pasture or range - 49		Wooded pasture - 28		Miscellaneous - 2		
Percent of cultivated land in						Classification of range site condition based on production		Classification of range site condition based on production		Farmsteads, roads, airports, etc.		
Alfalfa - 10 Sowed crops - 30 Row crops - 60												
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	Exc. - 2% Good - 5% Fair - 13% Poor - 80%		Fair - 15% Poor - 85%				
3.5	30	28	30	40	240	The general practice for good range utilization is 1 animal unit per 15 acres.						

GENERALLY REPRESENTS: Small mixed tributary watersheds of the Southwestern Prairies, Cotton and Forage Region, specifically the Cross Timbers and the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Plains and the Central Rolling Red Prairies land resource areas (J-84 and H-78, 80) in Kansas, Oklahoma, and Texas.

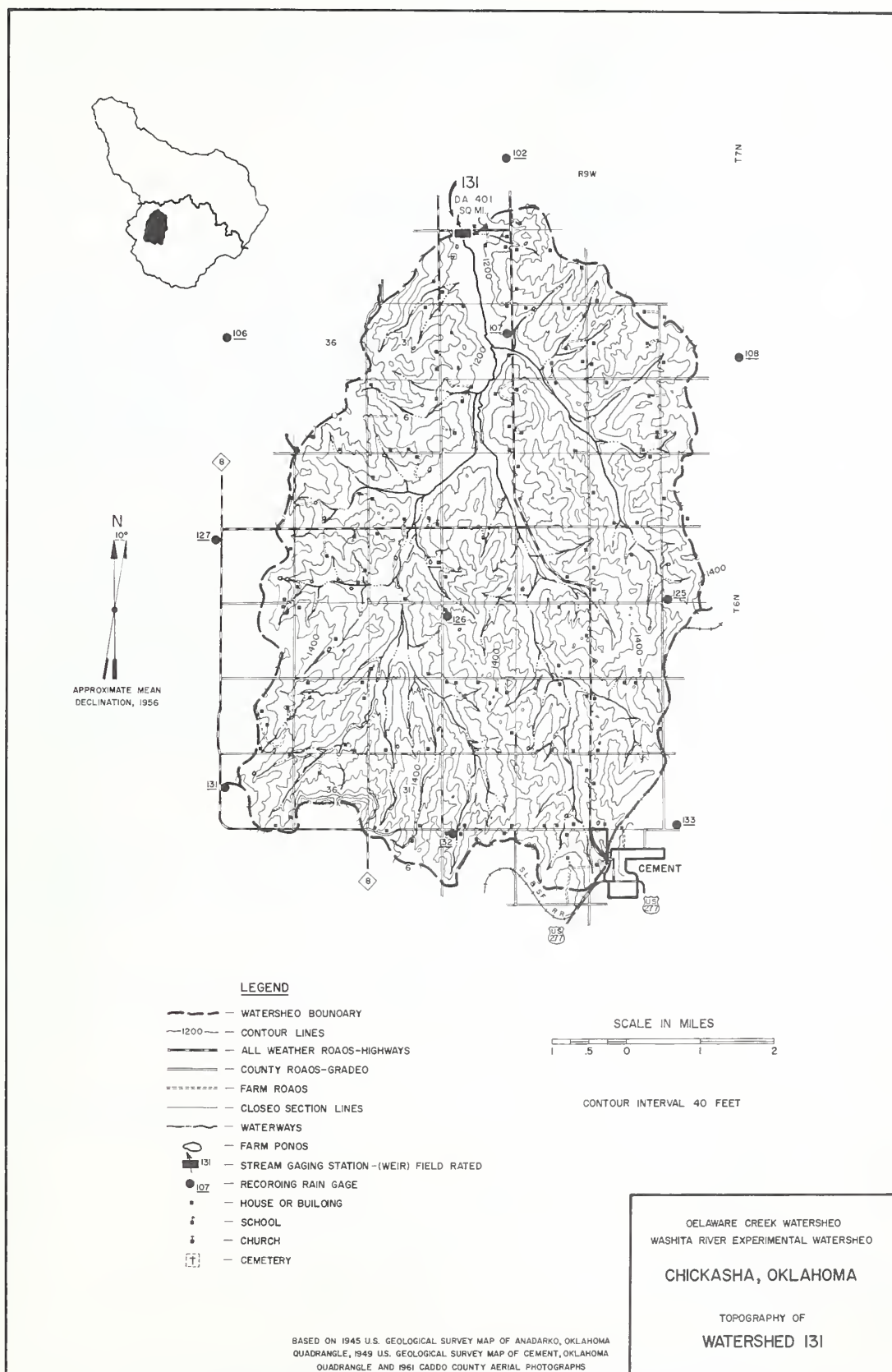
MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO									
MONTH YEAR	JAN	FEB	MAR	APR	MAY		JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1962 P 1/ Q	.35	1.01	.71	2.23	3.12		7.90	2.97	1.33	5.56 .075	2.27 .062	1.35 .099	1.08 .139	29.88		
STA AV 2/P Q											2.26	2.58	1.06			
MEAN P 3/ 62 YR Q	1.19	1.23	2.03	3.35	5.15		3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
MAXIMUMS FOR PERIOD OF RECORD 4/																
1962 TO 1962	9-15 1962	.0046	9-15 1962	.0045	9-15 1962	.0078	9-15 1962	.013	9-15 1962	.017	9-15 1962	.019	12-2 1962	.022	11-26 1962	.056
Notes: Quality of records: P, excellent; Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.7-7 and 9 and 69.11-4. 1/ Precipitation data obtained from a Thiessen weighted average of 10 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Sept. 1962. 3/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Sept. 1962, therefore, the maximum discharge and depths shown are probably not the annual maximums for 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Incomplete.																
PERIOD OF RECORD: Maximum — Sept. 15, 118 cfs (11.80 ft). Minimum — no flow (7.18 ft).																
PEAK DISCHARGES: (Above base of 400 cfs) 1962 — partial year, none.																
ABBREVIATED RATING TABLE: 1962 (Stage recorder datum; gage height in ft, discharge in cfs).																
GAGE HEIGHT								DISCHARGE								
7.30								.3								
7.50								1.2								
8.00								6.6								
9.00								31								
10.00								75								
11.00								140								
12.00								224								

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	3.91	.00	.37	.00	.00	.00	.07
2	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.84
3	.00	.00	.00	.00	.00	.01	.00	.00	.04	.00	.00	.00
4	.17	.00	.00	.08	.08	.07	.00	.00	1.11	.00	.00	.00
5	.00	.00	.00	.16	.00	1.05	.00	.00	.00	.53	.00	.00
6	.00	.00	.00	.04	.00	.01	.00	.00	.14	.00	.24	.00
7	.00	.00	.00	.00	.00	.41	.00	.00	.73	.00	.01	.00
8	.00	.00	.00	.00	.00	.08	.00	.00	.18	.00	.00	.00
9	.00	.00	.00	.00	.00	.89	.20	.00	.00	.00	.00	.00
10	.00	.00	.00	.28	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.53	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00
14	.06	.41	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.06	.00	.00	.00	.02	.00	.00	1.97	.00	.01	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.38	.00
18	.00	.00	.00	.00	.00	.28	.06	.00	.00	.03	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00
20	.00	.13	.67	.00	.05	.00	.08	.00	1.11	.34	.00	.00
21	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.01	.00	.00	.41	.00	.00	.00	.00	.00
24	.00	.00	.03	.37	.23	.01	.09	.09	.01	.00	.00	.10
25	.06	.02	.01	.00	.33	.52	1.83	.00	.26	.00	.00	.00
26	.01	.00	.00	.22	1.72	.01	.00	.00	.00	.00	.71	.00
27	.00	.37	.00	1.05	.00	.01	.00	.00	.00	.40	.00	.00
28	.00	.00	.00	.01	.71	.00	.29	.00	.00	.74	.00	.02
29	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.82	-----	.00	-----	.00
TOTAL	.35	1.01	.71	2.23	3.12	7.90	2.97	1.33	5.56	2.27	1.35	1.08
ST. AV.										2.26	2.58	1.06

NOTES: RECORDS BEGAN OCT 1, 1961. YEARLY PRECIPITATION 29.88 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 10 GAGES ON THE WATERSHED.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1									.2	1.5	* 2.6	4.9
2									.3	* 1.4	2.3	12
3									.3	1.6	2.4	12
4									5.1	1.5	2.5	6.6
5									1.2	1.7	2.6	* 5.3
6									1.1	3.5	2.7	5.0
7									3.2	1.9	4.7	4.7
8									1.8	1.6	3.1	4.2
9									1.2	1.5	2.9	4.0
10									* 1.0	1.6	2.9	4.1
11									.8	1.3	2.9	3.8
12									.8	1.2	2.6	3.5
13									.6	1.1	2.6	3.7
14									.5	1.1	2.5	4.1
15								.4	* 1.9	* 1.0	* 2.4	4.1
16								.3	4.5	.2	2.6	4.1
17								.3	1.8	1.0	3.8	* 4.1
18								.2	1.2	1.8	4.9	4.1
19								.2	1.1	1.7	3.6	4.1
20								.2	12	3.3	3.5	4.1
21								.2	5.9	2.3	3.6	3.9
22								.2	2.7	1.8	3.0	4.0
23								.2	1.8	1.4	2.8	3.6
24								* .2	1.6	1.3	2.9	4.0
25								.2	2.4	1.4	3.2	4.8
26								.2	2.8	1.5	9.2	4.2
27								.2	2.0	1.6	7.6	4.4
28								.2	1.6	* 12	5.5	4.9
29		-----						.1	1.5	5.2	4.8	4.7
30		-----						.1	1.4	3.1	4.6	4.3
31		-----						.3	-----	2.7	-----	4.4
MEAN									2.7	2.1	3.6	4.8
INCHES									.075	.062	.099	.139

NOTES: RECORDS BEGAN AUG 15, 1962. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0009276. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 2,138. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.



CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA

LOCATION: WATERSHED — Line Creek Watershed above U. S. Highway 81 bridge at Chickasha, Grady and Caddo Counties, Okla.; tributary to Washita; Red River Basin.

GAGING STATION — NE $\frac{1}{4}$ sec. 29, T. 7 N., R. 7 W., lat. 35°03', long. 97°58', northwest edge of Chickasha, Okla., at U. S. Highway 81 bridge.

AREA: 34,180 acres (53.4 sq. miles).

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	1/
	Percent of area	6	4	50	36	3	1	

SOILS: Residual, derived from siltstone and shale, alluvial terraces, and flood plain materials: 1/

Soil	Per- cent of area	Topsoil		Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability
Kingfisher-Renfrow silt loams	50	14	Moderate fine granular	Moderate	Strong medium blocky	Moderately slow	38	Moderately slow
Grant-Teller silt loams	36	14	Moderate medium granular	Moderate	Moderate medium subangular blocky	Moderate	34	Moderate
Reinach-McLain Port-Yahola silt loams	10	20	Moderate fine granular	Moderate	Moderate medium granular	Moderate	45	Moderate
Nash-Quinlan silt loams	4	10	Moderate medium granular	Moderate	Moderate medium granular	Moderate	30	Moderate

EROSION:	Erosion class	1	2	3	4	1/
	Percent of area	29	50	20	1	

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	1/
	Percent of area	10	10	53	20	3	4	0	

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 22.8; Cloud Chief, 0.0; Rush Springs, 18.6; Dog Creek, Blaine, and Marlow, 58.6; and Chickasha, 0.0. The percent area covered by the Dog Creek, Blaine, and Marlow formations is greater in this tributary watershed than in other gaged watersheds of the study reach. The percent area of alluvium is relatively high. This tributary is unique in several respects: It is composed of several tributaries that flow from areas of Permian rocks onto the alluvial plain of the Washita Valley; here they join a 6-mile long alluvial channel that leads the water along the south side of the valley to the gaging station. Some water leaks from this 6-mile long channel into the Washita alluvium before it reaches the gaging station and thus is ungaged. See description of hydrogeology and general geology map, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla., Bulletins 73, 87, and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 12.8 miles.

CHARACTER OF FLOW: Intermittent, interrupted.

INSTRUMENTATION: **Precipitation:** Weather Bureau substations plus recording weighing type gages installed on a 3-mile square grid. Grid pattern oriented in north-northeast direction and consists of approximately 13 gages, all in operation, with various time scales (primarily 24-hour). **Runoff:** Staff gage on right bank; Stevens A-35 recorder installed in 30-inch well upstream from U.S. 81 Highway bridge with 9.6 inches per day time scale, datum 1,073.79 ft.; all datum m.s.l. elev. by 1929 adjustment. Sandy channel control, fairly stable. Low flow current meter measurements made by wading; high flow current meter measurements made by crane at 12th Street bridge about 1,400 ft. downstream from gage well. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: Approximately 25% of the cropland area is farmed with a rotation of small grains, cotton, and alfalfa. The remainder is farmed to small grains, cotton, and sorghums. Most farmers use a moldboard plow in land preparation. Spring-tooth or spike-tooth harrows are used to control weeds until the following crops are planted. 85% of the farmed land with a slope greater than 1- $\frac{1}{2}$ % has structural conservation practices such as terraces, farm ponds, and grassed waterways applied. There are approximately 5 farm ponds per sq. mile. The following table shows the land use:

Percent of watershed in										
Cultivation - 75						Pasture or range - 23		Wooded pasture - 0	Miscellaneous - 2	
Percent of cultivated land in						Classification of range		Classification of range	Farmsteads, roads,	
Alfalfa - 20		Sowed crops - 52			Row crops - 28		site condition based on		site condition based on	airports, etc.
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	Good - 26% Fair - 71%		production		
						Poor - 3%				
4.2	28	38	40	33	290	The general practice for good range utilization is 1 animal unit per 10 acres.				

GENERALLY REPRESENTS: Small tributary watersheds of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA									
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 1/ Q	.27	.92	.90	1.78	2.88	7.38	2.49	.97	5.51 .124	2.09 .002	1.27 .008	1.22 .048	27.68			
STA AV 2/P Q										1.98	2.52	1.18				
MEAN P 3/ 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 62 TO 19 62	9-20 1962	.0138	9-20 1962	.0134	9-20 1962	.0263	9-20 1962	.063	9-20 1962	.074	9-20 1962	.091	9-20 1962	.098	9-20 1962	.121
Notes: Quality of records: P excellent, Q good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pp. 69.7-7 and 9 and 69.12-4. 1/ Precipitation data obtained from a Thiessen weighted average of 13 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Sept. 1962. 3/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Sept. 1962, therefore, the maximum discharge and depths shown are probably not the annual maximums for 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Incomplete.																
PERIOD OF RECORD: Maximum — Sept. 20, 1962, 478 cfs (16.18 ft). Minimum — no flow (7.70 ft).																
PEAK DISCHARGES: (Above base of 400 cfs) 1962 — partial year - Sept. 20, 478 cfs (16.18 ft).																
ABBREVIATED RATING TABLE: 1962 (Stage recorder datum; gage height in ft, discharge in cfs.)																
GAGE HEIGHT								DISCHARGE								
8.00								.6								
8.50								3.5								
9.00								9.6								
10.00								32								
11.00								67								
12.00								117								
14.00								259								
16.00								460								

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	3.08	.00	.35	.01	.00	.00	.04
2	.00	.00	.30	.00	.00	.09	.00	.00	.00	.00	.00	.98
3	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
4	.13	.00	.00	.05	.10	.02	.00	.00	1.17	.00	.00	.00
5	.00	.00	.00	.13	.00	.94	.00	.00	.00	.61	.00	.00
6	.00	.00	.00	.06	.00	.05	.00	.00	.11	.02	.17	.00
7	.00	.00	.00	.00	.00	.47	.00	.00	.57	.00	.03	.00
8	.00	.00	.00	.00	.00	.08	.00	.00	.26	.00	.00	.00
9	.00	.00	.00	.00	.00	.78	.18	.00	.00	.00	.00	.00
10	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
14	.04	.21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.15	.00	.00	.00	.01	.00	.00	1.37	.00	.03	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.29	.00
18	.00	.00	.00	.00	.00	.29	.10	.00	.00	.05	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
20	.00	.14	.82	.00	.04	.00	.22	.00	1.72	.27	.00	.00
21	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.07	.24	.27	.02	.18	.01	.01	.00	.00	.13
25	.07	.02	.01	.00	.33	.92	1.58	.00	.25	.00	.00	.04
26	.00	.00	.00	.05	1.31	.05	.00	.00	.00	.00	.75	.00
27	.00	.40	.00	.97	.00	.03	.01	.00	.00	.28	.00	.00
28	.00	.00	.00	.01	.83	.00	.21	.00	.00	.76	.00	.03
29	.00	-----	.00	.00	.00	.27	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	.58	-----	.00	-----	.00
TOTAL	.27	.92	.90	1.78	2.88	7.38	2.49	.97	5.51	2.09	1.27	1.22
STA AV									1.98	1.98	2.52	1.18

NOTES: RECORDS BEGAN OCT 1, 1961. YEARLY PRECIPITATION 27.68 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 13 GAGES ON THE WATERSHED.

1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1									.0	.2	* .1	.5
2									.0	.2	.1	.25
3									.0	.2	.0	16
4									.1	.2	.1	2.8
5									.7	.1	.1	1.6
6									.2	.5	.2	1.2
7									.3	.2	.4	1.1
8									.3	.1	.2	.9
9									.0	.1	.2	.8
10									.0	.1	.2	.8
11									.0	.1	.2	.8
12									.0	.0	.1	.7
13									.0	.0	.1	.7
14									.0	.0	.2	.8
15									* .49	.0	.2	.9
16									3.2	.0	.2	.9
17									.3	.0	.3	* .9
18									.0	.0	.4	.9
19									.0	.0	.4	.9
20									* .112	.1	.3	.9
21									9.5	.1	.2	.9
22									.8	.0	.3	.9
23									.3	.0	.3	.8
24									.2	.0	.3	.8
25									.3	.0	.3	.8
26									.2	.0	1.4	.9
27									.2	.0	1.8	.9
28									.2	.6	1.1	1.0
29		-----							.2	.4	.6	1.0
30		-----							.2	.1	.5	.9
31		-----		-----		-----			.1	.1	-----	.9
MEAN									5.9	.1	.4	2.2
INCHES									.124	.002	.008	.048

NOTES: RECORDS BEGAN SEPT 1, 1962. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0006964. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 2.848. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER

LOCATION: WATERSHED — West Bitter Creek Watershed above U. S. Highway 62 bridge, east of Chickasha in Grady County, Okla.; tributary to Washita River; Red River Basin.

GAGING STATION — SW $\frac{1}{4}$ sec. 29, T. 7 N., R. 6 W., lat. 35°03', long. 97°51', 4 miles east of Chickasha, Okla.; at U. S. Highway 62 bridge.

AREA: 38,910 acres (60.8 sq. miles).

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
	Percent of area	20	15	40	10	10	5	1/

SOILS: Residual, derived from shales and interbedded sandstone materials; these are deep fine textured soils gently sloping to gently rolling with more shallow soils on the steeper slopes and breaks. 1/

Soil	Percent of area	Topsoil		Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth (in.)	Permeability
Kingfisher silt loam	65	14	Moderate medium granular	Moderate	Strong medium subangular blocky	Moderate	40	Moderately slow
Renfrow silt loam	20	12	Moderate fine granular	Moderate	Strong medium blocky	Moderately slow	45	Slow
Grant-Nash silt loams	15	7	Moderate medium granular	Moderate	Moderate medium subangular blocky	Moderate	30	Moderate

EROSION:	Erosion class	1	2	3	4	
	Percent of area	12	18	60	10	1/

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	
	Percent of area	2	25	40	10	0	15	8	1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 15.0; Cloud Chief, 0.0; Rush Springs, 0.0; Dog Creek, Blaine, and Marlow, 2.5; and Chickasha, 82.5. The 15.0 percent alluvial area is entirely upstream from the Washita alluvial plain, in contrast to the lower Tonkawa and Line Creek Watersheds where most of the alluvial area is part of the Washita alluvial plain. Water from the tributary, derived largely from alluvium and Chickasha formations, has a relatively low mineral content. See description of hydrogeology and general geology map pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87, and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 15.7 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: **Precipitation:** Weather Bureau substation plus recording weighing type gages installed on a 3-mile square grid. Grid pattern oriented in north-northeast direction and consists of approximately 15 gages, all in operation, with various time scales (primarily 24-hour). **Runoff:** Staff gage on right bank; Stevens A-35 recorder installed in 30-inch well on right bank upstream from U. S. Highway 62 bridge with 9.6 inches per day time scale, datum 1,051.33 ft., all datum m.s.l. elev. by 1929 adjustment; from Oct. 19, 1962, to May 14, 1963. After May 14, 1963, tape down from tape weight gage; Stevens A-35 recorder and bubble gage servo-manometer on right bank with 9.6 inches per day time scale for headwater gage, datum 1,060.52 ft. Tailwater consists of a staff gage on right bank; Stevens A-35 recorder installed in 30-inch well on right bank with 9.6 inches per day time scale, datum 1,050.52 ft. Artificial control consisting of a broad crested "V" notch weir with 4 to 1 side slopes made of steel sheet piling with a reinforced concrete cap. Low flow current meter measurements made by wading; high flow current meter measurements made from cableway upstream from weir. Measurements made periodically and during each major event.

WATERSHED CONDITIONS: Approximately 30% of the land which lies in the Class I and II land, and a small portion of the Class III is farmed with a rotation of alfalfa and cotton. The remainder of the cultivated land is farmed with a rotation of small grains, sorghums, and cotton. Most farmers use the moldboard plow which buries all crop residue. Weeds are controlled by the use of spring-tooth harrow or spike-tooth harrow following the flat breaking and seeding of the above crops. Most farmers apply fertilizer according to recommendations made from soil tests. Approximately 95% of the Class II and III land has the needed structural conservation measures such as terraces, farm ponds, and grassed waterways applied. There are approximately 5 farm ponds per sq. mile. The following table shows the land use.

Percent of watershed in									
Cultivation - 58					Pasture or range - 38		Wooded pasture - 1		Miscellaneous - 3
Percent of cultivated land in					Classification of range		Classification of range		Farmsteads, roads, airports, etc.
Alfalfa - 10	Sowed crops - 64			Row crops - 26	site condition based on production		site condition based on production		
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	Exc. - 2%	Good - 26%	Fair - 60%	
4.5	30	50	45	35	300	Fair - 64%	Poor - 8%	Poor - 20%	
The general practice for good range utilization is 1 animal unit per 12 acres									

GENERALLY REPRESENTS: Medium size tributary watersheds of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1962 P 1/ Q	.47	.91	1.19	1.96	2.63	7.32	1.40	1.92	4.32	1.92	1.41 .098	1.18 .146	26.63			
STA AV 2/P Q										1.90	2.62	1.22				
MEAN P 3/ 62 YR	1.19	1.23	2.03	3.35	5.15	3.88	2.57	2.49	3.29	3.04	1.71	1.44	31.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 62 TO 19 62	12-3 1962	.0040	12-3 1962	.0039	12-3 1962	.0074	12-3 1962	.0153	12-2 1962	.0240	12-3 1962	.0319	12-2 1962	.0383	11-27 1962	.0768
Notes: Quality of records: P, excellent; Q, good. Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see pages 69.7-7 and 9 and 69.13-4. 1/ Precipitation data obtained from a Thiessen weighted average of 15 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Nov. 1962. 3/ Mean P based on 62-yr (1901-62) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Nov. 1962, therefore, the maximum discharge and depths shown are probably not the annual maximums for 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1962): Incomplete.																
PERIOD OF RECORD: Maximum — Dec. 3, 1962, 158 cfs (10.25 ft). Minimum — Nov. 22, 1962, 21 cfs (6.95 ft).																
PEAK DISCHARGES: (Above base of 600 cfs) 1962 - partial year — none.																
ABBREVIATED RATING TABLE: 1962 (Stage recorder datum: gage height in ft, discharge in cfs).																
GAGE HEIGHT								DISCHARGE								
7.00								2.5								
8.00								30								
9.00								110								
10.00								300								

1962 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	2.36	.00	.25	.00	.00	.00	.01
2	.00	.00	.00	.00	.00	.38	.00	.00	.01	.00	.00	.99
3	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00
4	.16	.00	.00	.05	.07	.01	.00	.14	.61	.00	.00	.00
5	.00	.00	.00	.08	.00	1.36	.00	.00	.00	.60	.00	.00
6	.00	.30	.00	.07	.00	.10	.00	.00	.06	.03	.31	.00
7	.00	.00	.00	.00	.00	.12	.00	.00	.44	.00	.07	.00
8	.00	.00	.00	.00	.00	.11	.00	.00	.30	.00	.00	.00
9	.00	.30	.00	.00	.00	.92	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.77	.30	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
14	.18	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.30	.00	.00	.00	.00	.00	.00	.65	.00	.03	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
17	.00	.00	.00	.01	.00	.00	.12	.00	.00	.10	.26	.00
18	.00	.00	.00	.00	.00	.28	.09	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	1.97	.06	.00	.00
20	.00	.13	.88	.00	.05	.00	.00	.00	.00	.29	.00	.01
21	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.63	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.04	.00	.00	.05	.00	.00	.00	.00	.00
24	.00	.00	.31	.07	.15	.00	.33	.02	.00	.00	.00	.12
25	.07	.02	.00	.00	.28	.52	.41	.00	.19	.00	.00	.04
26	.00	.00	.00	.31	1.31	.00	.00	.00	.00	.00	.74	.00
27	.00	.37	.00	.84	.03	.01	.05	.00	.00	.12	.00	.00
28	.00	.00	.00	.02	.74	.00	.33	.00	.00	.72	.00	.01
29	.00	-----	.00	.00	.00	.31	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.00	-----	.00	1.50	-----	.00	-----	.00
TOTAL	.47	.91	1.19	1.96	2.63	7.32	1.40	1.92	4.32	1.92	1.41	1.18
ST. AV.												
NOTES:	RECORDS BEGAN OCT 1, 1961. YEARLY PRECIPITATION 26.63 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 15 GAGES ON THE WATERSHED.											
1962 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1											3.1	4.8
2											3.1	9.5
3											3.1	* 6.8
4											3.1	7.9
5											3.2	* 5.6
6											* 3.5	5.3
7											* 2.7	5.1
8											1.2	4.8
9											5.4	4.8
10											3.6	4.8
11											3.3	4.5
12											2.8	7.1
13											3.0	8.7
14											3.5	5.8
15											3.5	5.9
16											3.2	5.9
17											2.7	5.9
18											2.5	5.9
19										3.1	9.1	* 5.9
20										3.8	* 3.8	5.6
21										3.8	2.8	5.3
22										3.2	2.1	5.1
23										2.8	6.4	4.8
24										* 2.7	2.9	4.8
25										2.7	3.9	5.1
26										2.8	* 8.1	5.5
27										2.9	9.8	5.1
28										5.9	10	4.9
29		-----								5.4	5.1	5.3
30		-----								3.7	4.3	5.1
31		-----		-----		-----				3.2	-----	5.1
MEAN											5.3	7.7
INCHES											.098	.146
NOTES:	RECORDS BEGAN OCT 19, 1962. TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0006117. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 3,242. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.											

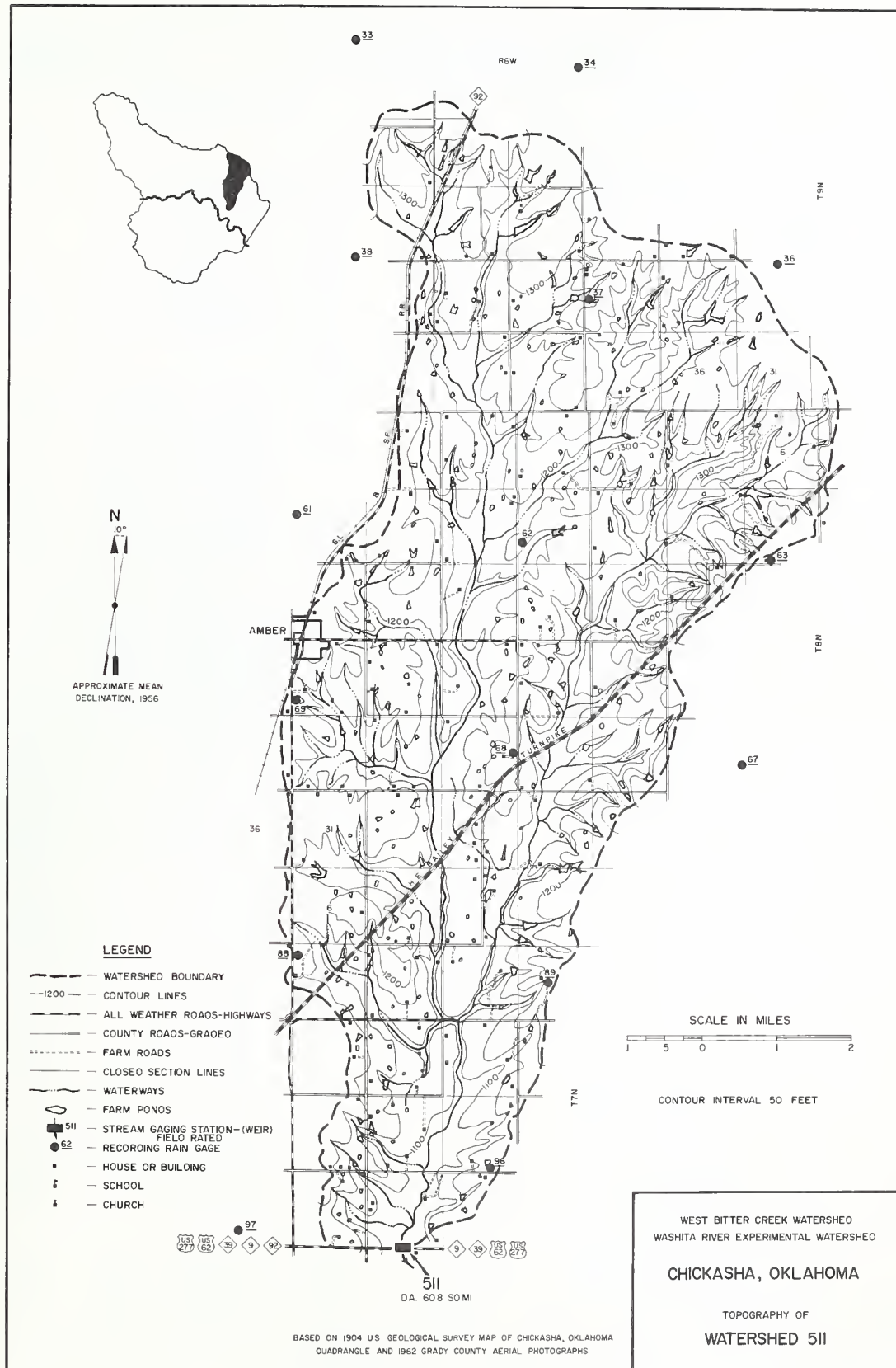


TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/
ARIZONA						FLORIDA—Continued					
Safford						Vero Beach					
45.1	519	7-19-57	0.1560	1-39	4	8.3	10,050	3-16—24-59	0.0441	10-55	4
W-I		7-26-57	.3266		4	W-3	(15.7)	6-17—24-59	.0941		4
		8-3,4-59	.2426		4			3-15—31-60	.0911		5
		7-28,29-61	.4813		5			9-15—10-1-60	.0462		5
		8-7,8-61	.6284		5			9-19—10-2-62	.0329		6
		9-25,26-62	.3228		6						
45.2	682	7-26-40	1.01	1-39	3	8.4	3,968	10-16—30-59	.0425	7-59	6
W-II	(1.07)	9-28-41	1.45		3	W-4	(6.20)	2-3—16-60	.0145		6
		8-7-42	.848		3			9-22—10-4-60	.1912		6
		8-9-43	1.00		3			1-12—21-61	.0170		6
		8-20-56	.4118		4						
		7-16-59	1.2035		4						
		8-22-61	.4452		5						
45.3	764	7-28-58	.1716	1-39	4	Watkinsville					
W-IV	(1.19)	8-16-58	.6565		4	10.1	19.2	7-11-41	1.96	9-39	4
						W-1		5-15-42	1.26		4
								11-26—30-48	.4013		4
45.4	723	8-28-57	.3603	1-39	4			4-22,23-51	.0738		4
W-V	(1.13)	8-30-57	.3603		4			8-13-58	1.3377		5
		8-20-60	.4096		5			3-5,6-59	.0914		5
		7-13-61	.1713		5			1-29-60	.0197		5
		8-15-61	.2904		5			1-30,31-60	.0405		5
		9-13-61	.1548		5			8-1-61	1.8336		5
								4-24,25-45	2.7113		6
Tombstone						IOWA					
63.1	36,900	8-17,18-57	.5380	1-54	4	Iowa City					
W-1	(57.7)	8-16,17-58	.1641		4	21.1	1,926	6-1—3-43	.4890	9-24	3
		7-26,27-59	.1332		4	Ralston	(3.01)	7-21-48	.3395		3
63.2	28,100	10-4,5-54	.0918	1-54	4	Creek		7-1,2-50	.6490		3
W-2	(43.9)	7-19,20-55	.1853		4			7-18,19-56	.8580		3
		7-20,21-59	.0376		4			11-15,16-61	.129		5
		7-21,22-59	.0516		4			7-13,14-62	.550		6
		7-26,27-59	.1298		4						
		8-17,18-61	.07095		5						
		7-25,26-62	.06463		6						
63.3	2,220	7-19,20-55	1.2637	5-54	4	MARYLAND					
W-3	(3.47)	8-14-58	.3174		4	College Park					
		8-16,17-58	.5588		4	5.6	3.53	8-19-41	.452	9-40	3
		8-17,18-61	.3107		5	W-6		8-10-42	1.65		3
		7-25,26-62	.06964		6			8-27-43	1.01		3
63.4	560	8-14,15-54	.8443	6-54	4			7-22-45	1.80		3
W-4		7-19,20-55	2.4795		4			12-20,21-57	.083		4
		7-22,23-55	.9523		4			7-8,9-58	.142		4
		8-14-58	.2301		4			9-11-60	.142		5
		8-16-58	.3151		4			9-11-60	.026		5
		8-17,18-61	.6284		5			9-11,12-60 ^{2/}	.154		5
63.5	5,510	10-4,5-54	.9540	1-54	4			8-25,26-61	.051		5
W-5	(8.61)	8-17,18-57	.5652		4			8-26-61	.074	(End	5
		7-25,26-62	.07380		6			3-11,12-62	.0151	1-63)	6
FLORIDA						5.7	4.11	8-19-41	.795	9-40	3
Vero Beach						W-7	3/3.52	8-10-42	2.42		3
8.1	49,915	10-1—6-51	.0419	4-51	3			8-27-43	.324		3
W-1	(78.0)	10-17—22-53	.0306		3			7-22-45	1.44		3
		6-15—22-54	.0399		3			12-20,21-57	.355		4
		10-15—22-56	.0797		3			7-8,9-58	.277		4
		3-16—23-59	.0349		4			9-11-60	.260		5
		6-17—23-59	.0781		4			9-11-60	.041		5
		3-15—25-60	.0748		5			9-11,12-60 ^{2/}	.355		5
		9-21—10-2-60	.1033		5			8-25,26-61	.204		5
		9-19—26-62	.0427		6			8-26-61	.355	(End	5
8.2	63,170	3-16—28-59	.0221	7-55	4	MISSISSIPPI					
W-2	(98.7)	6-17—25-59	.0700		4	Oxford					
		3-15—4-1-60	.0303		5	62.1	2,000	5-22-57	.2445	1-57	3
		9-15—10-4-60	.0374		5	W-4	(3.13)	4-3,4-58	.1453		4
		9-19—10-2-62	.0127		6			9-9,10-59	.2910		4
								1-17-60	.0659		5
								8-31-61	.0470		5
								9-4,5-62	.1438		6

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Donna hurricane.

3/ Area reduced 8-29-41.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/
MISSISSIPPI—Continued						MISSISSIPPI—Continued					
Oxford						Oxford					
62.2	1,130	1-22,23-57	0.1509	1-57	3	62.14	1.45	5-26-59	4.022	7-58	4
W-5	(1.76)	12-6,7-57	.2808		3	WC-2		6-11-59	4.022		4
		4-3,4-58	.3072		4			8-9-60	1.074		5
		6-10,11-59	.6073		4			8-31-61	1.477		5
		6-11-59	.4994		4			6-11-62	1.375		6
		1-17-60	.1273		5	62.15	1.61	5-26-59	4.552	7-58	4
		8-31-61	.3388		5	WC-3		6-11-59	5.082		4
		9-4-62	.1831		6			8-9-60	1.897		5
62.3	5,530	4-3—5-58	.4824	1-57	3			8-31-61	3.487		5
W-10	(8.64)	9-10—12-58	.1354		3			6-11-62	3.487		6
		5-22,23-59	.0941		4	62.16	3.01	5-26-59	2.596	7-58	4
		1-17-60	.0845		5	WP-4		6-11-59	4.646		4
		8-31,9-1-61	.4331		5			8-9-60	.517		5
		9-4,5-62	.1309		6			8-31-61	3.143		5
62.4	22,800	5-22,23-57	.2475	1-57	4			6-11-62	4.020		6
W-12	(35.6)	11-13,14-57	.1818		4	62.17	3,200	8-31,9-1-61	.1289	1-57	5
		4-3,4-58	.0835		4	W-17A	(5.0)	9-4,5-62	.0158		6
		3-2,3-60	.1084		5			10-16,17-62	.2299		6
		8-31,9-1-61	.0541		5	62.18	1,090	8-31,9-1-61	.2487	1-57	5
		9-4,5-62	.0676		6	W-35A	(1.7)	9-4,5-62	.1291		6
62.5	32,100	5-22,23-57	.1990	1-57	4	MISSOURI					
W-17	(50.2)	11-13,14-57	.1778		4	McCredie					
		3-2,3-60	.1057		5	25.1	153	10-4,5-41	2.01	1-41	4
		8-31,9-1-61	.1013		5	W-1		6-26-42	.944		4
		9-4—6-62	.0579		6			6-7-45	1.18		4
62.6	243	6-4,5-57	.2734	1-57	4			8-19-49	.359		4
W-19		7-12-58	.1061		4		154	9-21,22-51	.183		4
		8-24,25-59	.1469		4			6-30—7-1-61	.181		6
		1-17-60	.0347		5	25.2	44.3	6-29,30-57	1.328	1-51	4
		8-31,9-1-61	.3017		5	Pond #2		6-30—7-1-61	.260		6
		9-4-62	.0035		6	NEBRASKA					
		10-16,17-62	.2790		6	Hastings					
62.7	511	11-18,19-57	.3919	1-57	4	44.1	481	6-20,21-39	1.15	8-38	3
W-24		5-9,10-58	.1102		4	W-3		7-10-51	1.74		3
		1-17-60	.0757		5			6-7,8-53	.718		3
		8-31-61	.0182		5			4-22,23-57	.404		4
	2/512	7-25-62	.1220		6			5-1,2-57	.466		4
		10-4-62	.0012		6			6-15-57	1.82		3
62.8	1,080	6-30-57	.1331	1-57	4			6-15-57	21.18		4
W-28	(1.69)	7-22-58	.2415		4			6-12-58	.182		4
		9-9-59	.5610		4			5-15,16-60	.932		5
		1-17-60	.0468		5			8-11-61	.144		5
		11-15,16-61	.1456		5			8-23,24-62	.2700		6
		9-4-62	.1004		6	44.2	411	5-29,30-57	.159	7-39	4
62.10	20,000	11-18,19-57	.2826	1-57	4	W-5		6-15-57	.270		4
W-32	(31.3)	4-14—16-58	.0823		4			6-12-58	.323		4
		5-22,23-59	.0892		4			7-3—5-59	1.15		4
		3-2,3-60	.2142		5			5-15—17-60	.644	(End	5
		8-31,9-1-61	.2150		5			6-14,15-61	.249	1-62)	5
		9-4—6-62	.1052		6	44.3	2,086	6-5,6-42	.164	1-39	3
62.11	75,000	12-6—8-57	.0859	1-57	3	W-8	(3.26)	7-10-51	.352		3
W-34	(117.2)	3-25—27-58	.0123		3			6-7—9-53	.264		3
		4-14—16-59	.0467		3			8-28—30-57	.217		3
		5-22,23-59	.0230		4			6-12-58	.136		4
		3-2—4-60	.0626		5			7-3—6-59	.601		4
		8-31,9-1-61	.0519		5			5-15—17-60	.266		5
		9-4—6-62	.0306		6			6-14,15-61	.0960		5
62.12	7,550	11-18,19-57	.2325	1-57	4			8-23—25-62	.1270		6
W-35	(11.8)	4-14,15-58	.1135		4	44.4	3,490	6-15,16-57	.415	1-39	4
		5-22,23-59	.1708		4	W-11	(5.45)	8-28—9-1-57	.118		4
		3-2—4-60	.2330		5			7-3—6-59	.237		4
		8-31,9-1-61	.0342		5			5-15—17-60	.231		5
		9-4,5-62	.1100		6			6-14—17-61	.101		5
62.13	3.88	5-26-59	3.911	1-58	4			8-23—26-62	.0667		6
WC-1		6-11-59	4.959		4						
		8-9-60	1.533		5						
		8-31-61	3.169		5						
		6-11-62	3.476		6						

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Area increased to 512 after 12-31-61.
3/ Data in Reference 3 revised.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/
NEBRASKA—Continued						NEW MEXICO—Continued					
Hastings						Albuquerque					
44.5	3.62	6-16,17-57	1.35	3-39	4	47.3	183	8-19-56	0.5259	8-39	4
1-H		6-12-58	.677		4	W-III	8/168	10-19-57	.2006		4
		7-3-59	.901		4			8-21-58	.1386		4
		5-15-60	.970		5			8-15-61	.0146		5
		8-11-61	.441		5						
		7-10-51	1.16		6	Santa Rosa					
44.6	3.40	6-12-58	.849	3-39	4	64.1	42,880	7-19—21-55	.0622	1-55	4
2-H <u>2/</u>		7-3-59	2.52		4	W-1	(67.0)	7-9—11-56	.0437		4
		5-15-60	1.55		5			8-16—18-57	.0253		4
		8-11-61	.613		5			6-5—7-60	.1718		5
		8-23-62	1.23		6			7-13-61	.02609		5
44.7	3.95	7-18,19-58	1.56	3-39	4			6-30—7-1-62	.0255		6
3-H <u>2/</u>	3/3.77	7-3-59	6.45		4	OHIO					
		5-15,16-60	4.32		5	Coshocton					
		8-11-61	1.66		5	26.1	1.26	9-23-45	.583	4-37	4
		8-23-62	1.99		6	102 <u>2/</u>		6-12-57	3.64	5-57	4
44.8	3.84	7-18,19-58	1.25	4-39	4			6-28-57	1.76		4
4-H <u>2/</u>	3/3.64	5-4-59	1.23		4			8-21,22-60	.725	4-60	5
		5-15,16-60	6.08		5			4-25-61	1.42		5
		8-11-61	3.17		5			6-28-40	.780		6
		8-23-62	5.48		6						
44.9	3.93	6-12,13-58	.469	4-39	4	26.3	2.71	9-23-45	.527	4-38	4
5-H <u>4/</u>	3/4.02	5-4-59	.531		4	129		6-12-57	2.36		4
		7-3-59	3.50		4			6-28-57	1.16		4
		5-15,16-60	3.43		5			1-21-59	.249		4
		8-11-61	2.77		5			8-21,22-60	.556		5
		8-23-62	.69		6			4-25-61	1.16		5
44.10	4.16	6-27-56	1.48	4-39	4			6-28-40	1.12		6
6-H <u>4/</u>	3/4.01	6-12,13-58	.424		4	26.4	2.69	9-23-45	.678	4-38	4
		7-3-59	3.24		4	135		6-12-57	2.38		4
		5-15,16-60	2.89		5			6-28-57	1.01		4
		6-14,15-60	3.61		5			1-21-59	.199		4
		8-23-62	.48		6			8-21,22-60	.324		5
44.11	4.15	7-18,19-58	.782	4-39	4			4-25-61	1.32		5
7-H <u>4/</u>	3/4.26	5-4-59	.720		4			6-28-40	.933		6
		7-3-59	5.56		4	26.5	1.63	9-23-45	.852	5-38	4
		5-15,16-60	3.63		5	130		6-12-57	4.06		4
		6-14,15-60	2.88		5			6-28-57	1.43		4
		8-23-62	2.96		6			1-21-59	.444		4
44.12	3.93	7-18,19-58	.394	3-39	4			8-21,22-60	.195		5
8-H <u>2/</u>	3/3.97	5-15,16-60	2.19		5			4-25-61	1.23		5
		9-28,29-60	3.35		5			6-28-40	1.03		6
		8-23-62	.40		6						
44.22	3.74	6-15-57	2.07	7-39	4	26.7	2.21	9-23-45	.101	5-38	4
18-H <u>5/</u>		6-12-58	1.31		4	131		6-12-57	1.18		4
		5-18-59	.427		4			6-28-57	.328		4
		5-15,16-60	2.19		5			1-21-59	.0749		4
		8-11-61	.374		5			8-21,22-60	0		5
		8-23-62	.71		6			4-25-61	.283		5
44.26	3.83	8-23-62	3.18	6/5-62	6			5-22-41	.139		6
22-H						26.8	0.59	8-21,22-60	0	5-48	5
44.27	4.20	8-23-62	3.24	6/5-62	6	132		4-25,26-61	1.05		5
23-H								1-25—27-52	.106		6
NEW MEXICO						26.10	1.37	9-23-45	.377	1-39	4
Albuquerque						123		6-12-57	5.97		4
47.1	97.2	9-8-47	1.58	8-39	3			6-28-57	1.91		4
W-I		8-4-48 <u>7/</u>	.636		3			1-21-59	.553		4
		8-4-48 <u>7/</u>	.652		3			8-21,22-60	.478		5
		8-19-56	.871		4			4-25-61	1.23		5
		8-9-57	.551		4			6-28-40	1.68E		6
		8-24-57	2.71		3	26.11	1.61	9-23-45	1.63	4-39	4
		8-14-59	.324		4	115		6-12-57	4.12		4
		7-6-61	.014		5			6-28-57	1.59		4
47.2	40.5	8-24-57	2.793	8-39	4			1-21-59	.321		4
W-II		8-21,22-58	1.186		4			8-21,22-60	.172		5
		5-23-59	.519		4			4-25-61	1.16		5
		8-15-61	.034		5			6-28-40	2.57		6

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Watershed discontinued 1-4-55 to 1-1-58.

3/ Areas changed 1-1-59.

4/ Watershed discontinued 1-7-57 to 1-1-58.

5/ Watershed discontinued 7-31-55 to 2-8-57.

6/ P and Q available April 1941 to 12-31-54, but no selected events presented.

7/ Two storms on same day.

8/ Area reduced in 1957.

9/ Watershed discontinued 1-1-47 to 4-30-57 and 9-1-57 to 3-29-60.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/
OHIO—Continued						OHIO—Continued					
Coshocton						Coshocton					
26.12 127	1.65	6-12-57 3.12 6-28-57 1.27 1-21-59 .468 8-21,22-60 1.18 4-25,26-61 1.39 6-24,25-56 2.64	5-49	4 4 4 5 5 6		26.23 185	7.40	9-23-45 1.90 6-12-57 2.65 6-28-57 1.31 1-21-59 .229 8-21,22-60 .0730 4-25,26-61 .834 6-28-40 2.13	9-39	4 4 4 4 5 5 6	
26.13 109	1.69	9-23-45 .780 6-12-57 3.99 6-28-57 1.36 8-21,22-60 .106 4-25-61 .827 6-28-40 3.55	11-38	4 4 4 5 5 6		26.24 187	7.20	9-23-45 .806 6-12-57 2.75 6-28-57 1.57 1-21-59 .354 8-21,22-60 .0231 4-25-61 1.03 8-15,16-41 1.43	1-41	4 4 4 4 5 5 6	
26.14 103	0.65	9-23-45 1.54 6-12-57 4.01 6-28-57 1.94 1-21-59 .600 8-21,22-60 .0598 4-25,26-61 1.63 6-28-40 4.62	4-39	4 4 4 4 5 5 6		26.25 192	7.59	9-23-45 .789 6-12-57 2.09 6-28-57 .776 1-21-59 .600 8-21,22-60 T 4-25—27-61 .568 5-31—6-2-43 .730	9-39	4 4 4 4 5 5 6	
26.15 110	1.27	9-23-45 .905 6-12-57 4.24 6-28-57 1.66 1-21-59 .478 8-21,22-60 0 4-25-61 1.23 6-28-40 2.87	4-39	4 4 4 4 5 5 6		26.26 172	43.6	9-23-45 .353 6-12-57 2.64E 6-28-57 .969 1-21-59 .278 8-21,22-60 .0573 4-25-61 .833 6-28-40 .544	2-39	4 4 4 4 5 5 6	
26.16 113	1.45	9-23,24-45 1.08 6-12-57 3.77 6-28-57 2.08 1-21-59 .505 8-21,22-60 .274 4-25-61 1.20 6-28-40 2.47	9-39	4 4 4 4 5 5 6		26.27 169	29.0	9-23-45 1.37 6-12-57 2.59 6-28-57 1.40 1-21-59 .465 8-21,22-60 .0499 4-25-61 1.04 6-28-40 .674	1-40	4 4 4 4 5 5 6	
26.17 118	1.96	9-23-45 1.36 6-12-57 3.11 6-28-57 1.36 1-21-59 .393 8-21,22-60 .0622 4-25—27-61 1.02 6-28-40 1.93	1-40	4 4 4 4 5 5 6		26.28 177	75.6	9-23-45 .721 6-12-57 2/ 3.14 6-28-57 1.18 1-21-59 .441 8-21,22-60 .165 4-25-61 1.04 6-28-40 .684	1-40	4 4,5 4 4 5 5 6	
26.18 111	1.18	9-23-45 1.47 6-12-57 3.82 6-28-57 1.62 1-21-59 .620 8-21,22-60 .0133 4-25-61 1.29 6-28-40 .950	9-39	4 4 4 4 5 5 6		26.29 183	74.2	9-23-45 1.41 6-16-46 2.58 8-16-47 .388 9-1-50 1.76 6-12,13-57 2.50 6-28-57 1.30 8-21,22-60 .0373 4-25-61 1.14 6-28-40 .401	3-38	4 3 3 3 4 5 5 6	
26.19 121	1.42	9-23-45 .592 6-12-57 1.62 6-28-57 .936 8-21,22-60 .218 4-25,26-61 .633 6-28-40 1.10	4-39	4 4 4 5 5 6		26.30 196	303	9-23-45 1.06 6-16,17-46 1.90 8-16-47 .586 9-1,2-50 1.77 6-12-57 3.72 6-28-57 1.39 1-21-59 .504 8-21,22-60 .145 4-25-61 1.11 6-28-40 .458	5-37	4 3 3 3 4 5 5 6	
26.20 106	1.56	9-23-45 2.21 6-12-57 3.03 6-28-57 1.35 1-21-59 .452 8-21,22-60 1.28 4-25-61 .954 8-23-44 7.63	4-39	4 4 4 4 5 5 6		26.31 10	122	9-23-45 1.72 6-12-57 .329 1-21-59 .236 8-21,22-60 .363 4-25-61 .880 6-28,29-40 .146	1-39	4 4 4 5 5 6	
26.21 188	2.05	9-23-45 1.95 6-28-57 1.25 1-21-59 .432 8-21,22-60 .186 4-25-61 .798 6-28-40 1.56	9-39	4 4 4 5 5 6							

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Reprinted on page 182 of Reference 5.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/
OHIO—Continued						OKLAHOMA—Continued					
Coshocton						Cherokee					
26.32 5	349	9-23-45 6-12-57 6-28-57 1-21-59 8-21,22-60 4-25-61 6-28,29-40	0.321 .432 1.09 .290 .960 .275 .0887	1-40	4 4 4 4 5 5 6	34.13 W-13	1.99	7-4-60 5-21-61 6-2-61 6-9-62 9-14-62	1.17 1.51 2.83 .522 .681	7-60	5 5 5 6 6
26.33 92	920 (1.44)	9-23-45 6-12-57 6-28-57 1-21-59 8-21,22-60 4-25,26-61 6-28,29-40	.229 .282 .623 .282 .541 .470 .0804	1-39	4 4 4 4 5 5 6	34.14 W-14	2.16	5-21-61 6-2-61 6-9-62 9-14,15-62	1.68 2.29 .625 .919	9-60	5 5 6 6
26.34 94	1,520 (2.37)	9-23-45 6-12-57 6-28-57 1-21-59 8-21,22-60 4-25,26-61 6-28,29-40	.397 .437 .918 .348 .625 .503 .120	1-39	4 4 4 4 5 5 6	34.15 W-15	2.15	5-21-61 6-2-61 6-9-62 9-14,15-62	2.41 2.64 .578 .983	9-60	5 5 6 6
26.35 95	2,570 (4.02)	9-23-45 6-12-57 6-28-57 1-21-59 8-21,22-60 4-25-61 6-28,29-40	.362 .346 .614 .350 .411 .456 .1529	1-39	4 4 4 4 5 5 6	Stillwater					
26.36 97	4,580 (7.16)	6-4-41 9-23,24-45 7-11-46 6-12-57 6-28,29-57 1-21-59 8-21,22-60 4-25-61 6-28,29-40	.360 .323 .211 .260 .724 .373 .272 .548 .204	1-37	3 3 3 4 3 4,5 5 5 6	37.1 W-1	16.7	4-18-57 6-27,28-57 10-1,2-59 10-2,3-59 5-28,29-60 5-21-61 6-7-62	6.99 2.46 2.669 1.82 3.0210 2.9243 3.06	7-51	4,5 4,5 4 4 5 5 6
26.37 994	17,500 (27.34)	9-23,24-45 6-28,29-57 1-21,22-59 8-21,22-60 4-25,26-61	.114 .4385 .2510 .1386 .2216	10-36	4 4 4 5 5	37.2 W-3	92.0	5-23,24-55 4-18-57 6-10-57 6-27,28-57 10-1,2-59 10-2,3-59 5-28-6-1-60 5-21-61 6-7,8-62	.936 4.52 .859 .934 1.749 1.24 1.4168 1.8575 1.43	7-51	3 3 3 3 4 4 5 5 6
26.38 174	52.8	8-21,22-60 4-25-61 6-13,14-60	0 1.034 .702	5-60	5 5 6	37.3 W-4	206	4-18-57 6-27-29-57 10-1,2-59 10-2,3-59 5-28-6-3-60 5-21-61 6-7,8-62	2.79 .865 1.633 .939 .9980 1.2552 1.15	7-51	4 4 4 4 5 5 6
26.39 194	187	8-21,22-60 4-25-61 6-13,14-60	.0992 .8697 .732	1-60	5 5 6	TEXAS					
OKLAHOMA						Riesel (Waco)					
Cherokee						42.2 C 4/	579	4-24,25-57 5-9-57 5-13-57 6-23,24-59 7-9,10-61 7-16,17-61 6-4,5-62	.868 .112 .566 .625 .0498 .149 .314	2-38 3-49	4 4 4 4 5 5 6
34.10 W-10	1.68	5-21-61 6-2-61 6-9-62 9-14,15-62	2.58 2.76 1.13 3.77	8-60	5 5 6 6	42.3 D 4/	1,110 (1.73)	6-10,11-41 6-15,16-42 7-15-50 4-24,25-57 5-3,4-57 6-23,24-59 12-31-59 7-16,17-61 7-23-61 6-4,5-62	.747 .322 .536 .797 .670 .604 .0697 .164 .0459 .223	12-37 3-49	3 3 3 3 4 4 4 5 5 6
34.11 W-11	2.12	5-21-61 6-2-61 6-9-62 9-14-62	1.20 2.03 .470 .698	8-60	5 5 6 6	42.4 G 3/	4,380 (6.84)	2-14-59 7-23,24-59 11-4,5-59 12-31-59 7-16,17-61 7-23,24-61 6-9-11-62	.0487 .384 .0743 .0517 .0675 .0211 .0964	1-38 7-57	4 4 4 4 5 5 6
34.12 W-12	1.68	7-3,4-60 5-21-61 6-2-61 6-9-62 9-14-62	2.86 2.29 2.96 .925 1.19	7-60	5 5 5 6 6						

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Reprinted on page 208 of Reference 5.

3/ Reprinted on pages 252 and 253 of Reference 5.

4/ Watershed discontinued 6-30-43 to 3-1-49.

5/ Watershed discontinued 7-22-43 to 7-1-57.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/
TEXAS—Continued						TEXAS—Continued					
Riesel (Waco)						Riesel (Waco)					
42.6 W-1	176	6-10-41 3-26-46 4-27,28-49 4-24-57 5-13-57 6-4-57 6-23,24-59 6-15-61 7-16,17-61 6-9,10-62	3.40 .926 .627 2.20 1.64 1.09 1.89 .270 .132 2.18	7-37	3 3 3 3 4 4 4 5 5 6	42.16 Y-8 <u>7/</u>	20.8	4-24-57 5-13-57 6-4-57 6-23,24-59 6-18,19-61 6-9,10-62	2.71 2.23 2.15 1.68 .0782 1.86	3-39 1-49	4 4 4 4 5 6
42.7 W-2	130	4-24-57 5-13-57 6-23,24-59 5-22,23-61 6-25-61 6-9,10-62	2.04 1.54 1.42 .0459 .201 .943	7-37	4 4 4 5 5 6	42.17 Y-10 <u>8/</u>	18.6	4-24-57 5-13-57 6-4-57 6-23,24-59 5-25-61 6-15-61 6-9-62	2.70 1.91 2.40 .703 .366 .338 .394	7-38 5-46	4 4 4 4 5 5 6
42.8 W-6 <u>2/</u>	42.3	4-24-57 5-13-57 6-24,25-59 6-18-61 6-25-61 6-9-62	2.20 1.64 1.60 .230 .135 1.41	5-39 1-46	4 4 4 5 5 6	42.24 SW-12 <u>9/</u>	2.97	6-4-57 6-23,24-59 6-9-62	.610 .714 .468	1-38 6-47	4 4 6
42.10 W-10 <u>3/</u>	19.7	4-24-57 5-13-57 6-4-57 6-23,24-59 5-22,23-61 6-25-61 6-9,10-62	2.79 1.98 .853 1.96 .422 .334 .824	8-38 6-46	4 4 4 4 5 5 6	42.28 SW-17 <u>10/</u>	2.99	3-31-57 4-24-57 5-13-57 6-23,24-59 6-25-61 7-16,17-61 6-9-62	.441 2.90 1.74 2.17 .604 .348 3.79	2-39 1-48	4 4 4 4 5 5 6
42.11 Y <u>4/</u>	309	3-31,4-1-57 4-24,25-57 6-4,5-57 6-23,24-59 6-25-61 7-16,17-61 6-9-11-62	.150 1.81 1.43 .661 .205 .0598 .711	5-37 5-46	4 4 4 4 5 5 6	42.31 P-1 <u>11/</u>	0.243	6-25-61 7-16,17-61 6-9-62	1.67 .131 3.76	1-38 1-60	5 5 6
42.12 Y-2	132	4-24-57 5-13-57 6-4-57 6-23,24-59 6-25-61 7-16,17-61 6-9,10-62	1.68 1.24 1.79 .796 .253 .0721 .899	1-39	4 4 4 4 5 5 6	42.32 P-2 <u>11/</u>	0.243	6-25-61 7-16,17-61 6-9-62	1.67 .188 3.73	1-38 1-60	5 5 6
42.13 Y-4 <u>5/</u>	79.9	4-24,25-57 5-13-57 6-4,5-57 6-23,24-59 6-25-61 7-16,17-61 6-9,10-62	1.61 1.14 1.59 .789 .325 .0622 .663	1-39 1-46	4 4 4 4 5 5 6	42.33 P-3 <u>11/</u>	0.243	6-25-61 7-16,17-61 6-9-62	1.53 .310 3.43	1-38 1-60	5 5 6
42.14 Y-6 <u>6/</u>	16.3	4-24-57 5-13-57 6-4-57 6-23,24-59 5-25-61 6-15-61 6-9,10-62	1.05 .803 .931 1.03 .211 .815 1.00	1-39 5-47	4 4 4 4 5 5 6	42.34 P-4 <u>11/</u>	0.243	6-25-61 7-16,17-61 6-9-62	1.86 .245 3.51	1-38 1-60	5 5 6
42.15 Y-7 <u>6/</u>	40.0	4-24-57 5-13-57 6-4-57 6-23,24-59 5-22,23-61 7-16,17-61 6-9,10-62	2.36 2.03 1.37 1.76 .152 .0687 .953	1-39 5-47	4 4 4 4 5 5 6	VERMONT					
						North Danville					
						67.1 W-1	10,610 (16.58)	10-24,25-59 7-30-8-4-60 6-2-5-61 7-31,8-1-62	.1029 .0131 .0207 .0410	11-58	4 5 5 6
						67.2 W-2	146	11-28,29-59 7-30,31-60 6-2,3-61 6-23,24-62	.0360 .0224 .0262 .0162	10-58	4 5 5 6
						67.3 W-3	2,067 (3.23)	7-30-8-2-60 6-2-5-61 7-31,8-1-62	.0177 .0180 .0348	1-60	5 5 6
						67.5 W-5 Sleepers River	27,469 (42.92)	7-30-8-5-60 6-2-5-61 7-31,8-1-62	.0131 .0200 .0271	1-60	5 5 6

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Watershed discontinued 6-30-43 to 1-1-46.

3/ Watershed discontinued 6-30-43 to 6-1-46.

4/ Watershed discontinued 6-30-43 to 5-1-46.

5/ Watershed discontinued 6-30-43 to 1-1-46.

6/ Watershed discontinued 6-30-43 to 5-1-47.

7/ Watershed discontinued 6-30-43 to 1-1-49.

8/ Watershed discontinued August 1943 through April 1946.

9/ Watershed discontinued 6-30-43 to 6-1-47.

10/ Watershed discontinued 6-30-43 to 1-1-48.

11/ Watershed discontinued 7-21-43 to 1-1-60.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/
VIRGINIA						VIRGINIA—Continued					
Blacksburg						Blacksburg					
13.2	19.3	8-15-39	1.10	5-39	3	13.14	389	9-5-10-60	0.0427	9-60	5
W-III		6-14-40	.103		3	W-1		2-25-28-61	.1200		5
		6-5-42	1.90		3	Fosters		5-1,2-62	.1486		6
		7-6-49	.420		3	Creek					
		8-18-56	.073		4	13.15	1,058	8-24,25-61	.0423	9-60	5
		7-17,18-57	.118		4	W-1	(1.65)	11-6-8-61	.2610		5
		9-6-57	.039		4	Chestnut		6-13,14-62	.2317		6
		9-10-57	.034		4	Branch					
		8-21-60	1.775		5						
		9-4-62	.0012		6						
13.3	3.49	5-5-58	.747	9-51	5	WEST VIRGINIA					
W-IV		9-30-59	.280		5	Moorefield					
		4-4-60	.120		5	66.1	8.25	8-3-58 ^{3/}	.4436	6-58	4,5
		9-4-62	.089		6	W-1		5-7-10-60	.1092		5
13.4	6.08	5-5-58	.705	1-52	5		^{2/} 8.57	8-9-61	.0686		5
W-V		9-30-59	.276		5			5-23,24-62	.0944		6
		4-4-60	.060		5	66.2	10.06	8-3,4-58 ^{3/}	.7587	6-58	4,5
		9-4-62	.004		6	W-2		5-7-10-60	.1599		5
13.5	7.70	6-23-55	.317	9-51	5		^{2/} 9.73	8-9-61	.1686		5
W-VI		5-5-8-58	.953		5			5-23,24-62	.2496		6
		4-4-7-60	.207		5	66.4	6.32	8-3,4-58 ^{3/}	.6936	6-58	4,5
		9-4-62	.071		6	W-4		5-7-10-60	.1377		5
13.6	3,054	7-29,30-57	.0532	6-57	4			8-9-61	.0935		5
W-I	(4.77)	9-13,14-57	.0344		4			5-23,24-62	.2338		6
Thorne		1-14-58	.0347		4	66.5	9.55	8-3,4-58	.6513	6-58	4
Creek		4-3,4-60	.0397		5	W-5		5-7-10-60	.1593		5
		8-2,3-61	.0043		5			8-11-61	.0235		5
		10-14-16-62	.1152		6			5-23,24-62	.1684		6
13.7	786	7-28,29-57	.0728	8-57	5	WISCONSIN					
W-I	(1.23)	7-21-59	.0189		5	Colby					
Crab		7-27-59	.0087		5	29.1	345	7-28,29-49	.0808	5-49	3
Creek		10-16,17-60	.0066		5	W-1		5-13,14-56	.151		3
		8-25-28-61	.1656		5			6-4,5-58	.576		3
		6-23,24-62	.1403		6			5-16-18-60	.1847		5
13.8	893	5-30,31-59	.2874	8-57	4			5-4,5-59	.1550		6
W-I	(1.40)	7-22,23-59	.8471		4			9-13,14-62	.3231		6
Brush		9-6,7-59	.0862		4	Fennimore					
Creek		8-14,15-60	.1510		5	31.1	330	8-12-43	.906	7-38	3
		8-31,9-1-59	.0697		5	W-1		7-11,12-44	.303		3
		11-9-11-62	.0667		6			6-28-45	1.01		3
13.9	182	7-10-12-59	.0816	1-58	5			6-24-49	.723		3
W-I		10-8-59	.3908		5			7-15,16-50	1.04		4
Powells		4-9-12-61	.4277		5			8-5,6-51	1.69		4
Creek		4-12-14-61	.2502		5			8-3,4-40	.774		6
		5-31,6-1-62	1.314		6	31.2	22.8	8-12-43	.371	7-38	3
13.10	1,471	10-10-12-59	1.1156	1-58	5	W-2		7-11-44	2.69		3
W-I	(2.30)	8-26-28-60	.2566		5			6-28-45	2.68		3
Little		9-2-4-60	.1793		5			6-24-49	.730		3
Winns		8-23-61	.0672		5			7-15,16-50	1.56		4
Creek		6-20,21-62	.0612		6			8-5,6-51	2.14		4
13.11	555	6-26-29-58	.1289	4-58	5			8-3-40	.954		6
W-I		7-10,11-59	.1303		5	31.3	52.5	8-12-43	1.125	7-38	4
Rocky		9-30-10-2-59	.0282		5	W-3		7-11-44	.6640		4
Run		6-7,8-61	.2240		5			6-28-45	1.63		4
Branch		6-20,21-62	.0769		6			6-24,25-49	.4785		4
13.12	192	6-9,10-58	.0921	6-58	5			7-15,16-50	1.30		4
W-I		6-12,13-58	.4323		5			8-5,6-51	1.40		4
Pony		6-2-10-59	.2842		5			8-3-40	.693		6
Mt.		9-30,10-1-59	.0367		5						
Branch		5-26,27-62	.0247		6						
13.13	2,023	9-30-10-8-59	.2855	10-59	5						
W-I	(3.16)	6-9,10-61	.0160		5						
Chub		8-25-61	.0061		5						
Run		6-19,20-62	.0931		6						

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Drainage area changed to this value on 1-1-62.

3/ Original tabular data and graph in Reference 4 revised in Reference 5.

TABLE 4.—Index to selected runoff events for currently operating watersheds, by States, published through 1962—Continued

Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/	Location location No., watershed No.	Area acres (miles ²)	Date of event	Peak rate (in/hr)	Record began (mo-yr)	Refer- ence No. 1/
WISCONSIN—Continued											
Fennimore											
31.4	171	8-12-43	1.21	6-38	3						
W-4		7-11-44	.362		3						
		6-28-45	1.31		3						
		6-24-49	1.00		3						
		7-15, 16-50	1.07		4						
		8-5, 6-51	1.76		4						
		8-3-40	.950		6						
La Crosse											
32.3	2.71	8-16-40	1.92	1-37	4						
CW		6-29-41	1.25		4						
		9-15-41	2.58		4						
		6-23-52	4.50		4						
		7-19-52	3.55		4						
		8-26, 27-59	2.78		4						
32.4	2/2.95	6-23-52	3.39	1-52	4						
CWA		7-19-52	3.53		4						
		8-26, 27-59	2.30		4						

1/ For References 3, 4, and 5 see page 1. Reference 6 is the present volume.

2/ Erroneously reported as 3.06 acres in References 1 and 5.



